

**SOCIAL- ECONOMIC AND ENVIRONMENTAL IMPACTS OF  
INDUSTRIAL LOCATION IN OTA OGUN STATE.**

*BY*

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PGD/GEO/2005/320**

**DEPARTMENT OF GEOGRAPHY,  
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA.**

**AUGUST 2007**

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**DEPARTMENT OF GEOGRAPHY  
SCHOOL OF ENVIRONMENTAL STUDIES  
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA.  
NIGER STATE.**

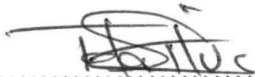
A THESIS REPORT SUBMITTED TO THE POST GRADUATE  
SCHOOL, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA,  
NIGER STATE.

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE  
AWARD OF POST GRADUATE DIPLOMA IN ENVIRONMENTAL  
MANAGEMENT

AUGUST, 2007.

## DECLARATION

I, **Da-silva Olatokunbo Olugbenga** declared that this project is solely the result of my work and has never been submitted anywhere for any degree. All literature sited have been duly acknowledged in the reference.



Da-silva O.O

9-11-07

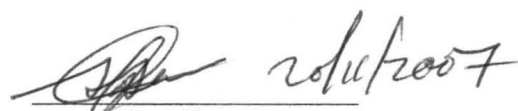
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## CERTIFICATION

This thesis titled: *“Socio-Economic and Environmental Impacts of Industrial Location in Ota Ogun State”* by Olugbenga, Da-Silva Olatokunbo (PGD/GEO/2005/320) meets the regulations governing the award of Post Graduate Diploma of the Federal University of Technology, Minna and is approved for its contribution to Scientific knowledge and literary presentation.

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**Mr. Salihu Saidu**  
Major Supervisor

  
Sign/Date

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**Dr. P. S. Akinyeye**  
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Sign/Date

## **DEDICATION**

**This work is dedicated to Almighty God, the Creator of the Universe.**

## ACKNOWLEDGEMENT

All glory, honour, majesty goes to the Almighty God for his protection, guidance, kindness and love.

A special words of thank goes to my Major Supervisor Mr. Salihu Saidu, who has sacrificially dedicated his spare time, talents and services to the accomplishment of this endeavour. May God continue to bless you. Amen.

Genuine appreciation is expressed to my colleagues in geography department; Lawal G.A, Istifanus Musa, Saliu, and others for their support towards the success of the programme. God bless you all.

I am particular grateful to the following people Yemisi Ale (My Sweet Heart), Engr. Sola, Engr. Lawal, Kate, Abu Ademu, and also to my entire family. God loves you all.

Once again, May I on behalf of Almighty God say Kudos to all my well wishers.

*Da-silva O.O*

## ABSTRACT

The coming together of industries in Ota has resulted in the influx of too many people into the area, thereby causing over crowdedness, crimes, traffic congestions and on street trading.

Industrial location has brought about increase in the land value thereby preventing to purchase a piece of land for developmental purpose. A few people are able to purchase land intensify the use sometimes without regard to planning principle.

Considering the environmental impact, it was discovered that there is no proper waste management system. The domestic and industrial solid wastes are disposed indiscriminately and offensive gaseous odours are released into the atmosphere of waste.

This project is aimed at finding out the socioeconomic and environmental impact of industrial location in Ota, Ogun State. This will be achieved through the following objectives.

Examining the impact of existing industries on the environment & socio economic development of the study area to appraise existing facilities & infrastructures in the study area.

Primary and secondary data's were collected for this project. Primary data involves administration of questionnaires. The secondary data were collected mainly for the purpose of this study, classification by industrial process will be adopted to classify the industries.

The results obtained is presented in tabular form and drawn graphically using bar chart.

Conclusively, recommendations were made.

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## CHAPTER ONE

### INTRODUCTION

Industrialization is the development of economic activity in relatively large unit of production making use of machinery and other capital assets with the task of labour finely divided and the relationships of employment formalized. It also involve the assembling of a wide range of resources from various sources for processing into various forms of products at specific location and the distribution of such product at a specific market outlets (Agunbiade, 1985). Industrialization has been widely accepted by both developed and developing countries as the centre- piece of the development process (Adeisa, 1985). Experience from the early starter in the economic development race shows that Nigeria has accepted industrialization as the vehicle for rapid economic and social transformation. The economic history of the advanced industrial economies provides yet an incontrovertible evidence on the relationship between industrialization, complimentary development in other sector of the economy and increasing the level of employment and income. Industrialization also provides market for primary producers while supplying a wide range of manufactured goods for consumers and other sector of the economy.

Prior to Nigeria's independence in 1960, manufacturing industries failed to make a remarkable impact on Nigerian economy. Only a few number existed and the existing ones were mostly located in urban centers for processing of agricultural products for domestic and export markets which were largely dominated by foreign trading companies. These colonial trading enterprises deliberately rejected industrialization in Nigeria for the primary motive of protecting their own trading interest.

Nigeria, however, witnessed considerable industrial growth shortly after independence in 1960. This has contributed to the growth in output and the overall growth of the economy. The ever-growing population and the increasing demand for manufactured goods gave a new impetus to industrial expansion in the country with respect to either locational factor or regional development factors.

At a point in time when developed countries are making strenuous effort to step up their industrialization process, there have been some controversies on how industrialization can assist in an attempt at appraising the development process in developing countries in general and Nigeria in particular.

Being a multi-faceted process, industrialization is not easy to define but for this purpose, the definition by the United Nations committee for industrial development shall be adopted. It is the process of economic development in which a growing part of the national resources is mobilized to develop technically up to date diversified, domestic economic structure characterized by a dynamic manufacturing sector having and producing means of production of consumer goods and capable of assuming a high rate of growth for the economy as a whole and of achieving economic and social progress. Although many people, particularly the economists, regard the development of manufacturing industries as a hub of industrialization, the mere development of manufacturing industries alone particularly tariff industries would produce mainly industrial enclaves i.e. a symbol of industries rather than its substance. In this type of economy, the achievement of real industrial modernization involves taking necessary measures to accelerate infrastructural development by the employment of manpower, social and agricultural towards a balanced growth in both the rural and urban areas.



The development of industrialization in Ogun State could be traced to Western Nigeria Development Corporation, owned by the then Western Region which comprised of the states now known as Oyo, Ondo, Osun, Ogun, Edo, Delta, Ekiti, and part of Lagos State. This body tried to locate industries from the regional development point of view. This led to the creation of wood processing and furniture industries in Otta in conjunction with international labour organization which can be rightly said to be the first major industrial development in Otta.

It therefore becomes necessary to study carefully, the issues connected with the identification of the impact of the existing industrial development in Otta, which coincidentally is the most industrialized town in Ogun State with the aim of improving on them where necessary and listing the result as guidelines for future industrial development.

### **1.1 STATEMENT OF PROBLEM**

Considering aesthetic and environmental impact, it was discovered that there is no proper waste disposal and waste management in Otta, Ogun State. The domestic and industrial solid wastes are disposed indiscriminately and offensive gaseous odours are released into the environment in the course of the process of decomposition of the waste.

The coming of industries has also resulted in the influx of so many people into the area, thereby causing overcrowded environment with people, crime, traffic congestion and on-street trading.

### **1.2 AIM AND OBJECTIVES**

This project is aimed at finding out the socio-economic and environmental impact of industrial location on the generality of the people in the Ota, Ogun State. To achieve this aim, the following objectives have been set up:

1. To examine the impact of existing industries on the environment and the socio-economic development of the study area.
2. To appraise the existing facilities and the infrastructures in the study area.
3. To consider the various governmental policies on the industrial location in the study area and to identify the extent of the success achieved.
4. To recommend appropriate economic and social measures to normalize any abnormality discovered in the course of the study.

### **1.3 JUSTIFICATION FOR THE STUDY**

The impacts felt from industrial location vary widely. These can be observed from different dimensions such as economic, social, transportation and educational. The presence of the above identified socio-economic and environmental variables in Ota is the major justification for this study. Also, the study becomes necessary in view of the dynamic nature of Ota. To be able to create a new course for the future, the knowledge of the present dictates the need for the study. There is need for the study when one considers the present situation with what was on ground ten years ago; there as been considerable changes.

### **1.4 SCOPE OF THE STUDY**

This project aims to research into the various socio-economic and environmental impacts of the industrial location with particular reference to Otta in Ogun State. To achieve this, the concentration of industries will be observed as a whole, while some of the major industries will be closely examined in order to achieve a reliable result.

The study will not research into the various manufacturing process of the various industries but it will rather look into what impacts are felt as a result of the location of the

selected industries. Detailed scientific analysis of pollutants released by the industries is also beyond the scope of this study.

## **1.5 THE STUDY AREA**

The study area covers about 39.2857 square kilometers (3,928.57 ha.) with Lagos/Abeokuta and Otta/Idiroko Road intersection as the reference point, the study area covers about 3 kilometer radius including the Ogun State Housing Corporation Industrial Estate.

### **1.5.1 Historical Overview of the Study Area**

Ota is situated at the boundary of Ogun and Lagos State and has grown to be the largest industrial town in Ogun State today.

Oral tradition has it that Ota was founded in about 1835 by the Aworis who originated from Ile-Ife, the cradle of the Yorubas. The Aworis first settled in Oke-Ata near Abeokuta but were forced to move southwards to the present site of Ota, about 53 kilometers, south of Abeokuta, by the Egbas. Ota which is the Headquarters of Ado-Odo/Ota Local Government Area has been prominent in the administrative and cultural set-up of its environs for a long time. Ota started off as the seat of a Local Council as far back as 1908 under the chairmanship of the then Olofa of Ota. By 1946, the Local Council was upgraded to a District Council with Ota as the Headquarters. Ota was then Headquarters of Ifo/Ota Local Government Area after the merger of both Ifo and Ota Local Governments in 1983. Another wave of creation of more local government and boundary adjustments in 1980 witnessed the creation of Ifo Local Government from Ifo/Ota and the merging of Ota with the defunct Ado-Odo/Igbesa Local Government

carved out of Egbado South Local Government and was Ado-Odo/Ota Local Government with Ota as the Headquarters.

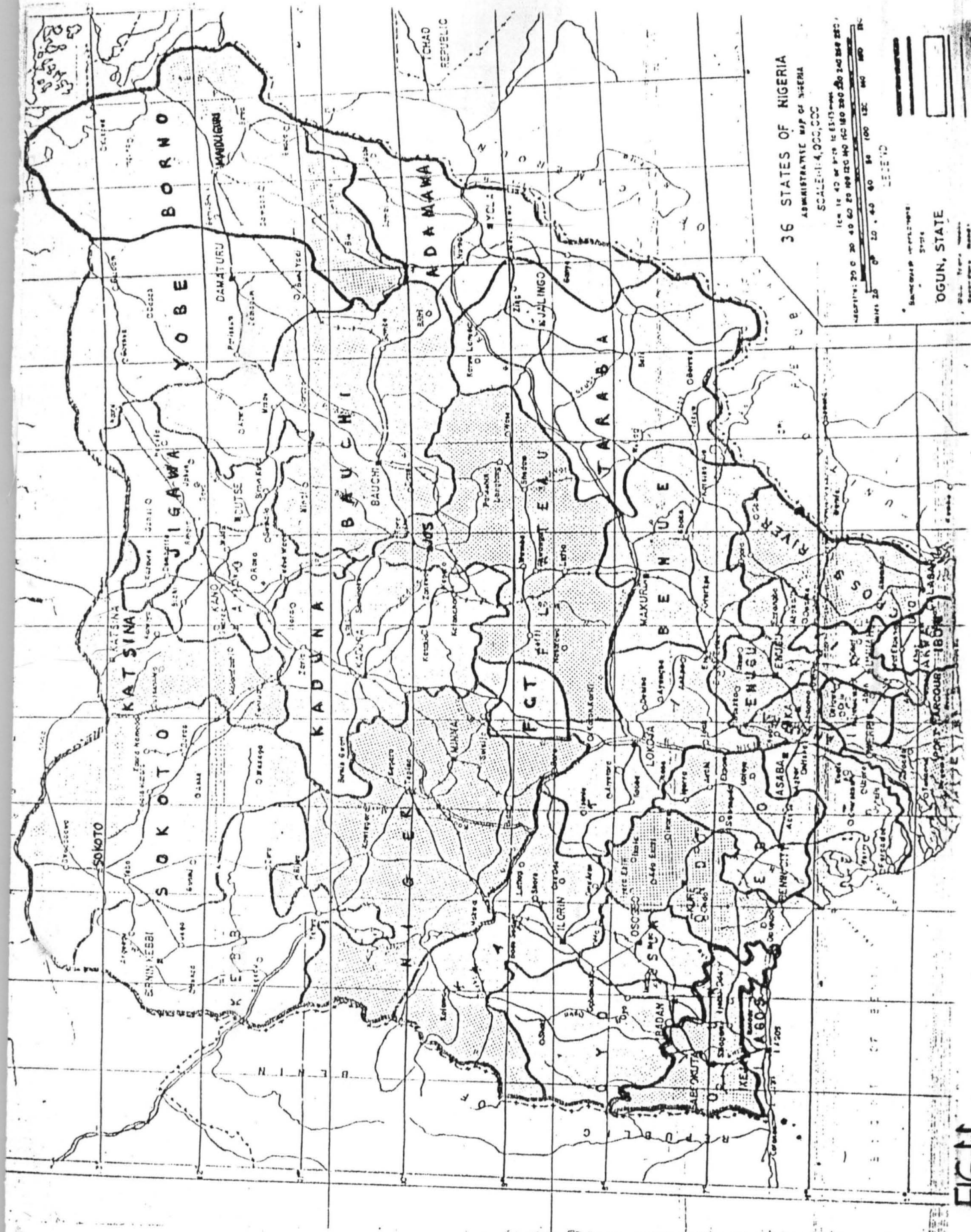
Ota is made up of four quarters, Ijana, Otun, Osi and Oruba. These four quarters are being administered by the heads of the quarters. Ajana heads Ijana quarters, Olukotun heads Otun quarters, Olukosi heads Osi quarters while the Akogun heads the Oruba quarters. The Olota is the traditional head of the town.

## **1.6 GEOGRAPHICAL LOCATION**

### **1.6.1 National Setting**

Ota is located in the South West of Ogun State. Ogun State itself is located in South Western Nigeria having an estimated population of about 57,863 with a land area of about 16,409.26 square kilometers. The State shares common border with Lagos State and the Atlantic Ocean in the south, Republic of Benin in the West, in the East by Ondo State and in the North by Oyo and Ondo States.

Within the national context, the State lies within the main stream of major highway traffic flows in South Western Nigeria. The State is served by the South-North bound rail-line in its Western Part passing through important towns like Agbado, Ijoko, Ifo, Ewekoro, Abeokuta the State Capital. Also, the Lagos-Ibadan expressway passes through the central part of the State, while Sagamu-Benin expressway bisects the Eastern Part of the State into almost two equal parts. This enables easy accessibility to other parts of the country. The Oja-Odan-Ilaro-Sagamu road provides a direct link between the Eastern and Western parts of the State and Republic of Benin through Ilaro.



36 STATES OF NIGERIA  
 ADMINISTRATIVE MAP OF NIGERIA  
 SCALE: 1:4,000,000  
 1cm is 40 km or 25 miles  
 DISTANCE: 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720 740 760 780 800 820 840 860 880 900 920 940 960 980 1000  
 STATE

MAP OF OGUN STATE SHOWING THE 20 LOCAL GOVT. AREAS

REFERENCE

- BOUNDARIES INTERNATIONAL ..... - + - -
- "          STATE ..... - - - -
- "          LOCAL GOVT. .... - - - -
- STATE HEADQUARTERS ..... [Symbol] ABEOKUTA
- LOCAL GOVT HEADQUARTERS ..... [Symbol] IFO
- STUDY AREA ..... [Symbol]

SCALE = 1000,000

7°30'

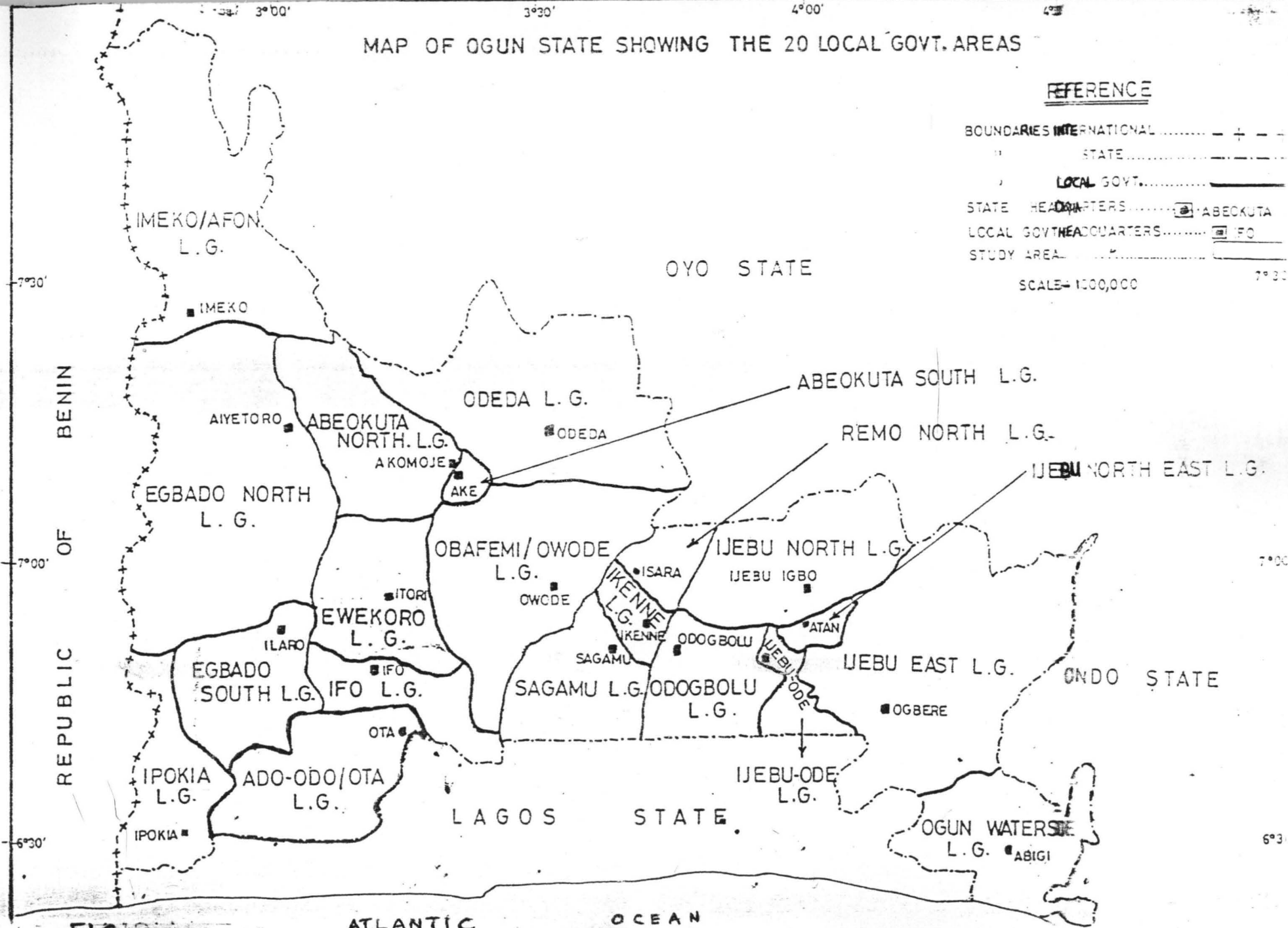


FIG 1.2

### REFERENCE

- Boundaries State .....
- Boundaries Local Govt. ....
- L. G. Headquarters .....
- Industrial Area .....

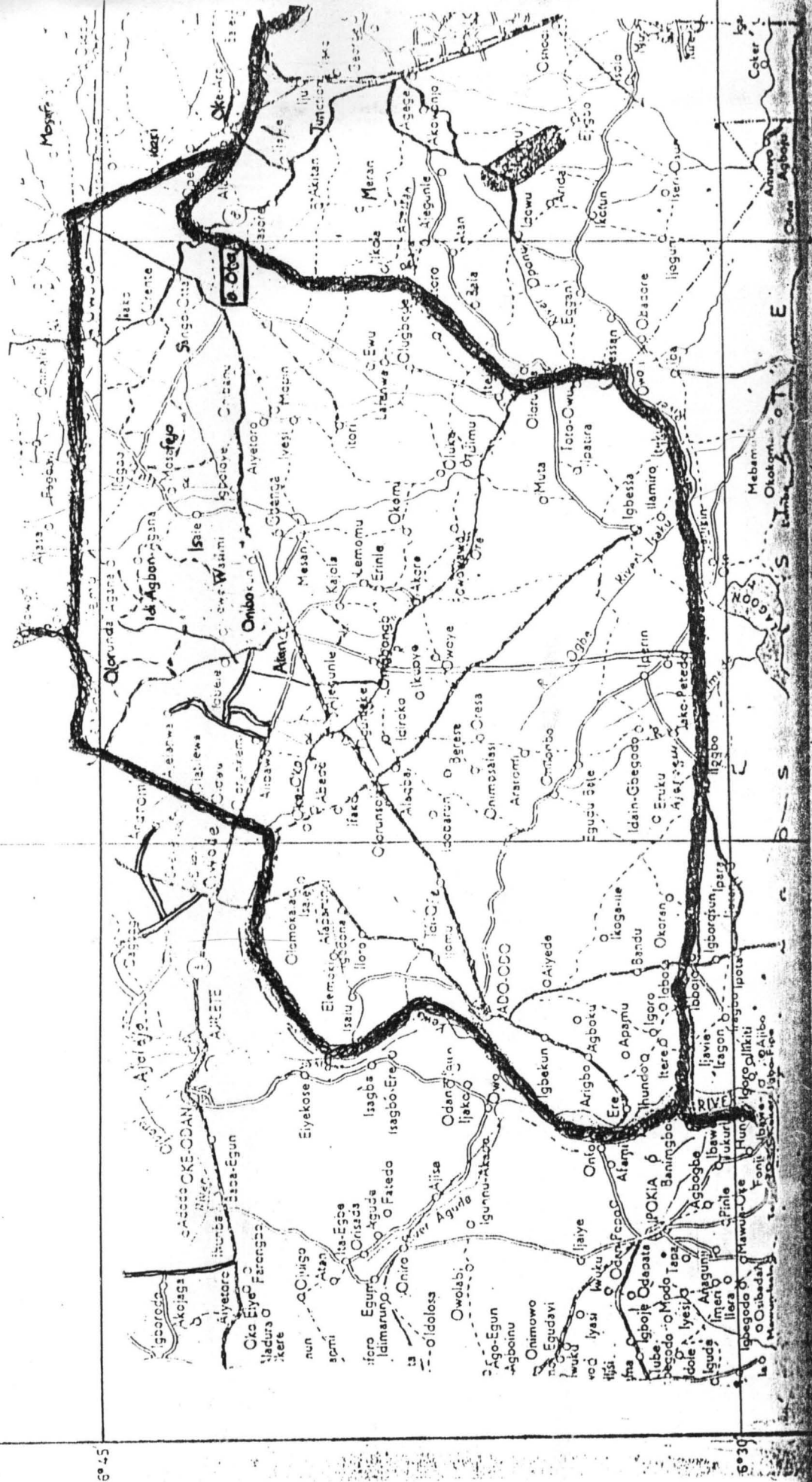


FIG 13

### **1.6.2 Regional Setting**

Ota is located between latitude  $6^{\circ}40'N$  and  $6^{\circ}50'N$  and between longitude  $3^{\circ}8'E$  and  $5^{\circ}15'E$ . Ota is the fourth largest town in Ogun State. It is the Headquarters of Ado-Odo/Ota Local Government covering an area 1,460 square km and share boundaries with Lagos State in the South, Egbado South Local Government in the West, Ifo Local Government in the North and East. In area distance, Ota is about 53 kilometers to Abeokuta, the State Capital. The Lagos – Abeokuta Highway and Ota Highway passes through Ota, providing easy access to Abeokuta, Lagos and the border town of Idiroko.

## **1.7 PHYSICAL CHARACTERISTICS**

### **1.7.1 Relief**

A relative relief analysis of the study area depicts clearly the low lying relief of the area. We have the relatively flat land ranging in relief from 5m to 50m which covers about 80% of the valleys of Rivers Atuwara and Iju. Another division which could be termed undulating plains are found towards the extreme Western and Eastern parts of the area outside the valley of river Atuwara. This coincides generally with the water divide region.

A mean slope analysis of the topography of Ota and its environs also reveals that slopes are generally gentle and do not average more than  $2^{\circ}$ . The central portion of the area and the river valleys generally have a mean slope value below  $1^{\circ}$ , while the mean slope value for the undulating plain in the immediate Western and Eastern parts of Atuwara valley and river Ilo valleys around Ota, Olasore and Ijoko ranges between  $1^{\circ}$  and  $2^{\circ}$ . (Source Master Plan of Ifo/Ota and Environs Survey Report, 1987).



### **1.7.2 Drainage**

The major rivers draining the area flow through the region in a North-South direction. River Atuwara with its tributaries, especially the Iju stream and Ilo stream, is the major river in the sub-region and is characterized by entrenched floor. The river drains the entire sub-region except the areas around Ota and Sango. A drainage analysis of the sub-region reveals that most of the tributaries of rivers Atuwara are second order streams with the exception of the Iju stream and two others which are third order streams. The stream frequency analysis reveals that there are between 5 and 7 streams per square kilometers of Iju and Atuwara drainage basins respectively. The drainage density is highest along the river valley.

The index of drainage intensity for the area reveals that values as high as 28 could be obtained along the river valleys. However, the value decreases to between 7.5, and 5 towards the south Eastern corner around Ota. (Source: Master Plan of Ifo/Ota and Environs Survey Report, 1987).

Some of the streams are used for various purposes in the sub-region. Apart from being used as major source of water supply as exemplified by the use of Ilo stream in Ota as abattoir rivers Iju is presently being used as the source of potable water supply to Ota while others such as Atuwara rivers being used as source of sand for construction purposes. In addition their flood plains are being used for agricultural purposes.

### **1.7.3 Vegetation**

The main vegetation of Ota and its environs consists of derived savannah forest and semi-deciduous rain forest. The Semi-deciduous forest contains several tree species shedding their leaves during the dry season. This is seasonal as the dry season last for 3 – 4 months. The vegetation is being cleared for farming and building construction purposes.

Important tree species found include *Terminalia superba* and palm, *Elaeis guineensis* and *chlorophora excelsa* which are deliberately preserved in the areas where they are found.

The dry forest/derived savannah is characterized by a grass undergrowth which is a result of persistent annual burning of the original forest. The trees found in this vegetation type are short and have fire resistance backs. Examples include *Elaeis guineensis*, *Dialium guineense* and *Phyllanthus discoides*. The commonest grass in the area is *Imperata cylindrical*. Other species of grasses common in the area are *Pennisetum purpureum*, *Cenchrus ciliaris* and *Andropogon* sp. (Source: Master Plan of Ifo/Ota and Environs Report, 1987).

#### **1.7.4 Climate**

##### **1.7.4.1 Temperature**

Like any other part of the West, the temperature is about 30.55°C with a normal decrease of about 1.4°C per 300 metres altitude. Temperature is highest from February to April before the commencement of rainfall. The mean temperature is about 22.2°C with normal decrease with altitude of 1°C and 2°C per 300 meters. Here, the minimum temperature is generally highest in March and April and lowest in August but the seasonal variation is small. The mean daily range of temperature in this part of the state is usually not more than 4.8°C.

##### **1.7.4.2 Rainfall and Humidity**

The rainfall of the area, like other parts of South Western Nigeria, is largely determined by the interplay of two air masses. The tropical continental air mass which is hot and dry and the tropical maritime air mass that is hot and moist. As the two air masses have different characteristics, they are separated by the inter Tropical Discontinuity (ITD). The

I.T.D remains North of the equator all the year round between latitude  $6^{\circ}\text{N}$  and  $8^{\circ}\text{N}$  in January moving to latitude  $20^{\circ}\text{N}$  in July. The Northward and Southward movement of this front is responsible for most of the rainfall in the area.

The rainfall in the area has double maxima with the highest rainfall in June and July. A minor dry period in August and a highest rainfall in September and October are observed. The mean annual rainfall is about 125.9 centimeters.

The humidity level is generally high throughout the year. In fact, figures of between 95% and 99% have been recorded for the area during the raining season. This high relative humidity coupled with the high temperature, often leads to the uncomfortable dampness and stickiness experienced in the area like any other parts of humid tropics.

#### **1.7.5 Geology and Soil**

Geographically, the most important single factor is the dominant geomorphic process of chemical weathering. Generally, sedimentary rocks of cretaceous and tertiary age underlie the area. The formation of the sedimentary rocks series are the coastal plain sands which merges unperceptibly Northwards into the Ilaro formation which unlike other sedimentary formation is poorly exposed. The rocks consist of yellowish unconsolidated rock with coarse and angular sands. Unlike the Ilaro formation, the coastal plain sands formation is mostly red sand stones, loose and ill sorted. Generally, the coastal plain sands formation is previous like the Ilaro formation. In addition, there is a considerable amount of clay in the area. The formation is extremely porous and the rocks are deeply weathered. Marshes and Swamps are found along the courses of rivers and streams.

### **1.8 POLITICAL, ECONOMIC AND SOCIO CULTURAL DEVELOPMENT**

The built up area of Ota can be divided into 3 sections:

- i. Sango Ota: this developed as an area for non-Yoruba communities especially the Hausa and the Ibiras.
- ii. Ota Core Area: bounded in the North by the Ota-Idiroko Iganmode road.
- iii. The newly developing area: This is to the North of the Ota-Idiroko including the Ogun State Housing Corporation Estate.

While the first one has become the major retail business centre, taking the advantage of its position at a junction of major roads in the town. The indigenous Ota town has lost its business prominence Kadiri, (1992). This is due to the decline in the trade of agricultural products like cocoa and palm kernel that Ota used to be known for. In addition, the indigenous Ota area has declined in commercial importance as a result of the removal of the main market to the west of the town along Idiroko road.

The physical and economic development of Ota could be traced to the fact that the town has been playing the role of a virile urban center, situated along the trade route between Lagos and the Benin Republic and Ghana. This is in addition to its nearness to Lagos metropolis; the nation's most advance economic region. Furthermore, one can attribute the development of the town to its position along two major roads, Lagos-Abeokuta Highway and Ota-Idiroko Highway. It is not surprising therefore, that Ota has developed socio-economically within the past ten years. The Town now has over one hundred and seventy (170) industries engaged in manufacturing operations. ( Source: Internal Revenue Office, Ota1988) ranging from breweries, textiles manufacturing, plastic and polythene bag manufacturing, beverage manufacturing, pharmaceutical industries to building material manufacturing as compared to about sixty industries ten years ago as reported in the Master Plan of Ifo/Ota and Environs Survey Report in 1987. As incidental uses to both industrial uses and residential uses, the area also witnesses the

setting up of small scale industries like block making, printing, sawmill and various artisan workshops. Furthermore, the socio-economic development of the town has influenced the establishment of service industries and business firms. These include branches of several banks, law and accounting firms, insurance firms, computer, photocopy and typing centres, private hospitals shopping complexes and a large number of restaurant and hotels. Most of these service industries are located along the major roads of the town taking the advantage of accessibility to other major urban centres within and outside the State.

Although, the historical background of Ota may not be significant to its present socio-economic development, its location is more important in explaining the present development.

## **1.9 EXISTING LAND USE PATTERN**

### **1.9.1 Residential Use**

The study area is predominantly residential. This use covers about 60% of the land area. The newly developing areas are relatively orderly developed because some of the areas have approved layout plans guiding development. The older areas such as Araromi, Ketere, Ajegunle and the core area of Ota are haphazardly developed, characterized by inadequate access roads draining channels.

It is pertinent to note that developments along Idiroko road, Lagos-Abeokuta road and Ijoko road are of mixed uses (residential cum commercial). Most of the buildings along these routes have shops attached to them or as part of the buildings. Industrial uses are also found within some residential apartments.

### **1.9.2 Commercial Use**

Commercial activities are highly concentrated around Sango, taking the advantage of its location at the intersection of two major roads, Lagos/Abeokuta and Ota/Idiroko roads. Commercial use covers about 10% of the total land use in the area. The study area is having several petrol filling stations in operation. The over concentration of commercial activities in this areas enables it to record about 13 hours of commercial activities (8.00a.m – 8.00p.m)local times. There are another sets of people (informal sector) that use the central divide along Lagos – Abeokuta road for commercial activities between 5.00 p.m and 10.30 p.m. This is also noticeable along roads.

The Gateway Hotel also records some level of commercial activities around the lock up shops and offices hired out to the members of public within the premises of the hotel.

### **1.9.3 Industrial Use**

There are two industrial areas, by concentration, namely: The Ogun State Housing Corporation Industrial Estate along Idiroko Road and Ijoko Industrial area along Abeokuta road. Others can be classified as lightly concentrated industrial area. They are Ijoko road Industrial Area, Ilogbo road Industrial Area and Tomori Estate Industrial Area. It is pertinent to not that the Erinko Industrial/Residential scheme being allocated by the Ogun State government which is very close to the present industrial area along Ijoko road, will also provide a relatively organized concentration of industrial development when fully developed.

The industries are strategically located in the North, East and West of the study area. The Southern part records only one functional industry along Ilo Awela road which manufactures wine and spirits. There are about 3 industrial developments under

construction in this area. This gives an insight to the fact that all the cardinal points of the study area are relatively industrialized. It is equally important to mention here that between 1987 and 1997 about 57 building plans were approved for industrial use.

#### **1.9.4 Recreational Use**

Standard recreational facilities are non-existent within the study area. The only one of note is to the medium sized football pitch beside Local Government School III which is being used as temporary stadium. Although, there is a proposed stadium site along Itele road acquired about 10 years ago but is yet to be developed. Other recreational facilities include school and college football pitches and a lawn tennis court in Ansar-Ud-Deen Comprehensive College, Ota.

There are no parks and official open spaces in the area. There are a number of hotel of varying standards which have bars that are open to the public. Since recreation is more than drinking, so, the relatively large number of hotels can not be said to be adequate for the recreational need of the people. The Gateway Hotel, Ota provides a variety of recreational facilities such as swimming pool, and cinema hall for the public. Sona Breweries also have a swimming pool in its senior staff quarters which is not open to the public. Mention should also be made of Ota Recreational Club which has some recreational facilities such a table tennis and dart board for members only.

#### **1.9.5 Public Use**

The sector deals with the spatial location of the public facilities such as health, education, religion, cemeteries, libraries, fire services and the police.

**a. Education:**

There are several public primary schools within the study area. Apart from the public schools, there are several privately owned Nursery and primary Schools within the study area as against the one they have ten years ago.

Many of the private schools make use of residential buildings for their activities except for a few that have relatively adequate land area for their operations. The rapid increase in the establishment of private schools can be attributed to the increased level of income of the residents due to employment opportunities posed by industries located in the area. This increase in the economic power and loss of confidence in the public schools due to poor management has increased the rate at which private schools are being established.

Unlike what is happening in the Private Nursery and Primary Schools, the private secondary schools are yet to enjoy full patronage due to their extremely high fees charged in the public secondary schools. The private secondary institutions charges fees between N50, 000.00 and N100, 000.00 per session including boarding fees as against less than N20, 000.00 charged in the public schools, hostel accommodation and feeding fees inclusive. There is need for the establishment of more public secondary schools at Sango considering its population.

**b. Health:**

There are about five public owned health care facilities in the study area, the major one being the General Hospital along Idiroko road. These are not adequate considering the trend of socio-economic growth of the area. The vacuum created by this inadequacy has been filled by private health care facilities. There are about twenty five private hospitals in the study area. Some of these hospitals enjoy relationship with some of these



industries. Indeed, there is no industry that does not have relationship with one private hospital or the other.

**c. Religious Facilities and Cemeteries:**

There are numerous churches and mosques located in the study area. This reflects that Christianity and Islam are the dominant faith. However, traditional worshippers exist especially in the core of Ota. The churches and mosques are provided with financial assistance by the respective Christian and Moslem missions. Because of the absence of public cemetery, most deceased are buried in their homes or compounds. The Christian Association of Nigeria (CAN) has a cemetery along Joju road where deceased members of the churches are buried. It should be noted that some churches bury their deceased within the premises of the church. It is adequately not worthy that the Indian Community within the study area acquired a portion of land along Ilogbo road for cremation of their dead community members.

**d. Fire Services and the Police.**

There is only one fire service station in the study area and it is located in Ota along Ilo Awela road behind the Ado-Odo/Ota Local Government Secretariat.

Security for the entire populace and properties within and beyond the study area is provided by the Divisional Police Headquarters located at Sango along Lagos-Abeokuta Highway. A police post is also located opposite the Magistrate Court at Ota assisting to maintain peace and orderliness within the study area.

**1.9.6 Circulation.**

Ota is highly accessible in terms of regional linkage to other parts of the country and the West African Countries. The Lagos-Abeokuta road and Ijoko/Ota road that intersect Sango divides the study area almost four equal parts.

The Lagos-Abeokuta road links the study area with Lagos in the South, Ifo Local Government and Abeokuta (The State Capital) in the North. The Ota Idiroko road links the study area and indeed the state with the West African Countries at the South Western part of the state.

The Lagos-Abeokuta 4-lane dual-carriage way runs through only Sango and it covers an approximate stretch of 4 kilometers from the state boundary with Lagos state to Sango. These roads are of Bitumen and asphalt surfacing. Other roads in the study area are owed by the Local Government except Iganmode road which is owed by the State Government. The Local government roads are predominantly earth surfaced except Joju road, Plaza Avenue, Mefun road, Atan/Ahmadiya road, Papa Aro road, Awolowo way/Osi-Okede road and Ilo Awele that are of gravel and bitumen surfacing. Iganmode road is like other roads earlier mentioned are in the state of despair. Iganmode road, through Awolowo way and Ilo Awela road is now being used as a bye-pass route to avoid the usual traffic hold up at Sango junction.

#### **1.10 STRUCTURE OF THE THESIS**

The first chapter of this thesis explains the aim and objectives, statement of problems, justification of the study, scope of the study, and the study area. Chapter two treats the conceptual framework, literature review for the study with emphasis on the evolution of industrialization in Britain and Nigeria. Chapter three explains the geographical location, physical characteristic, political, economic and socio cultural development and existing land use pattern in Ota. Chapter four provides the main body of the thesis as it covers the impacts of industrial location in the study area which is the main focus of the thesis.

Chapter five concludes the project. It draws inferences from the analysis contained in the earlier chapters, make suggestions and recommendations and it also draws conclusion.

## CHAPTER TWO

### LITERATURE REVIEW

The promotion of urban industries has long been attempted in Nigeria. In 1946, the Federal Department of Commerce and Industry was set up partly to promote such industries under the ten- year plan of development and welfare plan, that is, 1946 – 1956.

Its objectives were to create job opportunities for increasing population and also to facilitate the development and acquisition of technical skills.

Though, during the past two decades, the rate of industrial growth was quite impressive by 1970, a small proportion of the labour force was in wage employment in manufacturing establishment. The new industrial establishment, bringing development to Nigeria include petroleum refineries, manufacture of auto-tyres, cement, paper-mill, plastic goods and steel.

The labour force in Nigeria is mostly semi-skilled and unskilled. Although, in most countries, including Nigeria it is growing faster than their economies. Industries are by and large concentrated in large urban centers, particularly capital cities and port towns giving rise to the phenomenon of urban privacy.

To relieve the excessive concentration of people and employment Nigerian Government has resorted to the establishment of industrial areas and industrial estates. However, instead of locating industrial estates in the medium and small sized towns to improve their weak economy, the estates have placed in major urban centers, thereby aggravating urban concentration and congestion.

According to Nelson Anderson, he defined an urban area as a cluster of points of population concentration, and also a distinct geographical entity, the boundaries of which are fairly obvious from an aerial view, so much that one can locate the appropriate limits (roads, rivers, rail, roads-line) by simply walking around the urban areas and noting where the non extractive use of space ends.

Two features of the definition above are of significance, first is, it stipulates some minimum as to population size, density or non-agricultural employment. Secondly, it suggests how an area can be delineated.

“Development” according to the Town and Country Planning Law Decree No. 88, 1992 means the carrying out of any building, engineering, mining or other operations in, on over or under any land or the making of any environmental change in the use of land or demolition of building including the felling of trees and the placing of free standing erections used for display of advertisement on the land and the expression “develop” with its grammatical variations shall be construct accordingly.

Richard A. Stephenson gave the assertion that integrating physical factors with social and economic variables when discussing urban growth and development is crucial. The physical factors have not always been appreciated or properly documented from the colonial times, through the end of the 19<sup>th</sup> century, physical factors played a very important role in urban development. But this understanding declined in importance in recent generations and only in the 1970s has it returned to its proper shape.

The organic link between industrial impact and urban development is broadly endorsed in the literature. Indeed, it has brought improvement of economy. While the structuralist see economic growth as concomitant with the shift of labour and capital from less to

more production sector, the classical contend that development is perpetuated through long term effects of capital accumulation, labour force expansion and total factor productivity growth. Thus, at the bottom, both schools perceive productivity and urban development as intimately connected.

Urban growth is a relatively complex phenomenon, involving a number of reciprocal cause and effect relationship. Although, it is usually based on the growth inducing effects of manufacturing activity, however, it is not entirely true that the stimulus for growth must derive from manufacturing and their multiplier effect. What is important is that some activities exist within the community that find some part of its market beyond the local area, thus, an export activity is necessary.

### **1. Aspects of the Urban Environment (natural, build, social and economic)**

#### **That Influence Health and Well-being**

The majority of the total world population lives in the urban areas so it is important to cope with the challenges that these areas face (paddison 2001). In the western world one of the biggest challenges has been a trend towards suburbanization, and apparently inexorable exodus of businesses and relatively wealthy people from the major conurbation (town and country planning Association –TCPA). The challenge is one of the deteriorating urban areas and burgeoning suburbs (Brebbia et al 2000). This is an ever-present theme in much urban literature and explain the formation of the urban task force by the UK government, whose aim it was to 'identify the causes of urban decline in England and recommend practical solutions to bring people back into cities, towns and urban neighbourhoods (ODPM 1999). This process of revitalizing urban areas, known as the 'urban renaissance', has received much attention in literature. As the TCPA suggests,

'a recovery of the joys and advantages of urban living was obviously needed: the iconography of living had become mostly negative, yet the sprawling car- dependant pseudo- suburbia invented in the 1970s and 1980s in the shire counties was obviously unsustainable and offered a hollow quality of life'. Even if the quality of life in suburban areas was indeed 'hollow', it most have been perceived as better than the quality of life in the urban areas that people were escaping from. In order to make urban living more attractive therefore, urban quality of life would have to be improved.

In addition to training urban residents, there is responsibility of all levels of government to look after the welfare of urban inhabitants. Paddison (2001) for example suggests sustainability in an urban setting refers to the goal of meeting welfare and utility level for the city's population. Paddison defines urban sustainability as the non-decreasing welfare level to the local population in the long run without jeopardizing the development options of the surrounding territories, and which contributes to the reduction of the negative effects on the biosphere. Meeting this welfare level would also require ensuring a good quality of life for urban dwellers. This key theme of urban quality of life that emerges is well summarized by Frick (1986): improving the quality of life in the urban areas should be the principal objective of the urban design and planning.

Quality of life is however a complex concept (Riseborough 2000). As research in London from the Department of the Environment (1996) shows for example, perceptions of the quality of London are 'strongly determined by the spheres of activity of different groups of people that vary enormously. Academic findings (Lan Yuan et al 1999; Riseborough 2000) suggest however that although an individual's perception of a life depends on subjective experience, that there are sufficient components of quality of life

that are common to most members of society and therefore it is possible to measure some key elements that contribute to quality of life. Broad agreements on what are important components of quality of life in urban neighbourhoods are summarized below (taken from Riseborough 2000).

### **Environment Important Component of Quality of Life.**

Physical	air quality, derelict land, open space, noise, traffic, litter
Built	building type, tenure, condition, appearance, affordability
Social	education, community participation, services and leisure, crime, health, mental health
Economic	employment, income.

Since quality of life is such a multi-faceted concept (Lan Yuan et al 1999) it is generally accepted in literature that determining the quality of life of urban residents is complicated. Despite this, most components of quality of life are in some way affected by well-being, satisfaction, health and standard of living etc. (Lan Yuan et al 1999). Most urban literature focuses of 'health' as a determinant of quality of life. Health is however also a complicated concept. The concept has become so complex because there has been a considerable realization in literature that there health is affected by most aspect of the urban environment.

As Aboutorabi and Abdelhalim 2000 suggest, the 'traditional definition of health as the absence of diseases has in recent decades been modified to include a broader concept'. They argue that health, according to World Health Organisation (WHO) definition is 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' (WHO 1992). Human health is affected by the sum of environmental condition in the integrated manner; the conditions within the biological,



physical, built and social environmental interact together (Aboutorabi and Abdelhalim 2000). This multi-dimensional concept of health is present in much literature on the urban environment and accounts for the broad range of disciplines that have written on aspect of health and well-being in urban settings, including psychology, fitness, town planning, residential design and social exclusion. Since health is a multi-dimensional concept, academic and policy literature (WHO; Department of the Environment; Hoggett et al 1999) also strongly suggests that the determinants of health must be much more than simply 'the provision of hospital and medical service' (Davies and Kelly 1993). Below is a summary of the different aspects of the urban environment identified in literature as influencing health and well-being.

<b>Aspects of Urban Environment that Influence Health</b>	<b>Source</b>
Housing; social services; living and working conditions; Quality of physical and socio-economic environment; Quality and accessibility of care services.	WHO Healthy Cities (1995)
Unemployment; the natural environment; welfare	Department of the Environment (1995)
Urban deprivation; housing quality; access to services; transport infrastructure; ethnic and cultural variation; income, education, occupation, poverty	Schell and Ulijaszex (1999)
Social segregation; degradation of living space, unemployment; social exclusion; transport	WHO (2000) Barton and Tsourou
Social determinants of health: work and employment;	WHO (1998)

social cohesion; social exclusion; transport

broad range of public policies administered by local  
government

Davies and Kelly

(1993)

It is apparent from urban literature that health is affected by many aspects of the natural, built, social and economic urban environments, the same environments that contain important components of quality of life. The WHO argues that the root causes of ill health are indeed social, economic and environmental in nature

Since health is affected by many aspects of the urban environment, the enhancement of the quality of life of both urban and non-urban residents, is also affected by many factors. There are many features made apparent in urban literature that contribute to high quality of urban living. It must be noted however that most literature highlighting the benefits of urban literature is government policy related, whilst academic literature tends to concentrate on the problems, inequalities and potential solutions present in urban areas.

It is evident from policy literature that the benefits urban areas bring to health and quality of life stem from the high concentration of people, infrastructure and activities. As will be discussed in greater depth below, the high densities of urban areas mean that fewer car journeys have to be made, which affects pollution levels, air quality, congestion, noise and protection of the natural environment, all of which have an influence on quality of life.

Higher densities also means there is less pressure to build on land outside urban areas which both protects these areas for the people who live and work there and preserves much cherished countryside, both of which contribute to a high quality of life.

Additionally, higher densities result in greater efficiency in the use of energy (De Roo and Miller 2000), for example it takes less energy to heat an apartment block that it does

in a low density housing estate with an equivalent number of households. It has been argued in a report of the Urban Task Force (1999) that higher density living also means that there may be enough support for local services to keep them open. It is also contended in the report that higher densities can also lead to a stronger sense of community, but this contention is debated elsewhere (see Paddison 2001).

Urban life can also be a solution to the 'blights of unemployment, poverty, ill health and crime' (Local Government Association – LGA – 1998). The sources of strength in urban areas include technological innovation, centres of excellence in education and health and a wide range of businesses and industries (LGA 1998). The benefits that urban areas bring to quality of life stem from the concentration of opportunities and choices.

## **2. Urban Environment Problems that have a Negative Effect on Health and Well – being.**

Despite the fact that urban areas, through their concentration of people, places and opportunities, bring many benefits to life of urban inhabitants and surrounding areas, the existence of urban problems, and the negative effect these have on health and quality of life, are far more prevalent in urban literature. As Berce-Bratko (2001) suggests, cities always present certain problems in their very concentration of human occupancy of space. Despite the fact certain businesses and people are leaving urban areas, the number of households in urban areas is expected to increase. For example in London, the number of households is projected to increase by 26,000 each year, with 80% of the growth being one-person households (Llewelyn-Davies Consultants 1998). If not suitably addressed, problems in urban areas are likely to intensify with the increase of urban inhabitants below is a summary of some of the environmental problems most cited in literature, which impact on health and quality of life in urban areas.

## **Environmental Problems**

## **Source**

Environmental problems with an impact on the natural environment:

Paddison (2001)

- atmospheric pollution
- water pollution
- depletion of energy resources
- solid waste disposal

Environmental problems with an impact on the

Social environment:

De Roo and Miller (2000)

- noise
- congestion
- water supply
- disposal of sewage
- control of air pollution
- over-consumption
- waste management
- air quality
- noise and water pollution
- traffic congestion
- loss of open space
- degradation of urban landscape
- traffic congestion
- disaffected citizens,
- physical decay

Pender et al (2000)

Partners for Liveable  
Communities (2000)

- institutional breakdown

- crime

- deteriorating areas

Brebbia et al (2000)

- traffic congestion

- energy consumption

Lan Yuan et al (1999)

- air, water and noise pollution

- traffic congestion

- waste management

- over-crowding

- sanitation

- housing

- open spaces

- psychological stress

Schell and Ulijaszek (1999)

- crowding

- noise

- commuting

- litter

- air pollution

- poor structural conditions of housing

It can be seen that literature suggests there exists a plethora of problems in the natural, built, social and economic urban environments. The most prominent and recurrent problems in literature are however ones relating transport, 'particular emphasis on the environmental problems arising from auto-orientated cities' (Lan Yaun et al 1999), residential conditions and pollution/waste.

Often in urban literature, these problems are discussed in terms of urban environmental quality, specifically, declining environmental quality (Brebbia et al 2000). environmental quality does not just refer to the natural environmental, but also the social and the economic. Below is the table summarizing the indicators of environmental quality found in urban literature. Similarities can be made with the table of environmental problems above.

<b>Enviromental Quality Indicators</b>	<b>Source</b>
- air quality	Pender et al (2000)
- biodiversity	
- water quality	
- waste disposal	
- water quality	Brebbia et al (2000)
- air quality	
- transport	
- trees	
- atmospheric condition	
- green areas	
- social infrastructure: schools, heath centres, community centre	
- employment	
- job opportunities	
- good learning opportunities	
- safe, secure places to live	
- accessible healthcare	

- quality and affordable housing
- sustainability (population density, waste, air pollution, congestion)
- green space
- good public transport
- shopping and leisure facilities
- arts/culture

If it is assumed that environmental quality and quality of life are linked, then it can be seen from the literature that many different aspects of the urban environment will influence quality of life.

It can also be seen from the literature that differing components of the urban environment pose as serious problems for health and quality of life. Managing all these issues and problems in order to maximize quality of life will therefore be a difficult task.

### **3. Uneven Distribution of Urban Environmental Problems**

This difficult task of managing the various problems that affect quality of life in urban areas is further complicated by the fact that these problems are not evenly distributed throughout urban populations and places. Both academic and policy literature agrees that the impacts of urban environment problem are not distributed equitably among all urban communities (Lan Yuan et al 1999) and that people on low income are often those worst affected by environmental problems (Joseph Rowntree Federation 2001). British urban area experience a significantly uneven distribution of environment goods and bads within their boundaries (Atkinson and Dietz) and urban populations do not experience the same urban feature (Schell and Ulijaszek 1999). Problems in the natural, built, *social and* economic urban environments are disproportionately burdened on lower income groups.

This fact is acknowledged in most literature that discusses urban environmental problems.

The WHO in 1992 argued that 'there is a strong and obvious association between the health status of people and their social economic conditions'. In particular in literature, differences between the health status of socio-economic groupings is discussed in relation to transport and housing. As Schell and Ulijaszek (1999) argue, 'car access and housing tenure are powerful predictors of mortality'.

## **2.1 CONCEPTUAL FRAMEWORK**

### **2.1.1 The Concept of Industrial Development**

Today, concepts, policies and methods of industrial development are being analyzed in a great number of countries. Commendable progress has been made, but in order for any policy or methods to be implemented, an effective instrument is needed. As a result, industrial development or promotion institutes and other similar institutions are functioning in many countries as in the case of United State of America. But these organizations often discover that the problem of developing an entire country is a complex task that may exceed their capabilities. On the other hand, the goal of many countries economic policy is a more balanced development of all the country's regions. The prime motivation of such policies is more economically rational and equitable geographical distribution of instruments. Vagale (1974) recognized that one of the essential objectives of planning should be to remove extreme disparities in the levels of development of various regions. However laudable this objective may be, it is dependable whether this is practicable or even desirable. Diversity in regional economic



levels is caused by structural dissimilarities and irregularities in the size of the regions, their population, geographical situation and natural endowments.

Moreover, there are differences in such factors as the productive efficiency of working population, the utilization of human and material resources, availability of power, water, transportation and other items of infrastructure. Inter-regional differentials in growth potentials cannot therefore be completely eliminated. To a certain extent, regional inequality and imbalance both sectionally and spatially may have to be tolerated, if not encouraged, in order to hasten the rate of economic growth at the initial stages of development and to exploit the interest of the nation as a whole. In a capital scarce economy, when investment resources are meager and have to be utilized to the best advantages, and regions which already have urban infrastructures and economic overheads will take precedence over depressed regions should be neglected. Over-developed, over-crowded principal city, along with deserted, badly neglected environment, is a phenomenon that many countries are trying to fight. To decentralize economic activity in accordance with economic criteria is one of the most important challenges that environmental managers and business men in many countries will have to face. Diseconomies created by huge urban agglomeration and deserted regions can be particularly serious in nations where continuing development depends on avoiding wasted resources. Just as government and business firms have found it useful to decentralize their functions in order to more effectively administer the whole country, industrial development planners too are finding it necessary to decentralize economic and industrial efforts.

### **2.1.2 Locational Factors**

The location of industry is of particular importance and provides a useful starting point for an explanation of the internal structure of an area. Relative locations are the strategies for the development of an area which is the interference in the existing pattern of activities within the area and it is regarded as the fundamental importance in structuring economic opportunity.

Production involves the use of inputs (factors of production) to produce outputs (goods and services) as efficiently as possible. The location of the unit of production, (the firm) will obviously be determined in relation to the source of the input and the market for the output. The various factors of production (land, labour, capital and enterprise ) plus the market factor, constitute primary determinants of location. Other refined and specific determinant factors are:

1. Quality and quantity of labour
2. The geographical location of the site
3. Necessary infrastructures.
4. Central and local government policy
5. Behavioural factors

The study of Industrial location factors developed from two approaches:

- a) The theoretical approach which attempts to abstract from reality, constructing an ill-embracing system of pure rules. The search is for general theory of industrial location, which can explain the existing structure of industrial location and changes in that structure.

- b) The empirical approach which involves the listing of factors which might be important together with examples of situations where they have in fact been important in the location of particular industries.

## 2.2 INDUSTRIAL LOCATION THEORY

Location is concerned with spatial relationships and this has over time also attracted the attention of numerous economic geographers. The resulting contributions have aimed at providing an all embracing system of 'pure rules' of location, attempting to derive the 'optimum location' for the individual firm. But such a goal is difficult to achieve when one considers the following:

- a) The wide range of industries
  - the primary sector, such as mining, quarrying etc.
  - the secondary sector with a multitude of manufacturing industries
  - the tertiary sector with rapidly growing service trade
  - quaternary sector which comprised of high expertise information based industries.
- b) The wide variety of firm, each with its own input combination and market characteristics with each industry.

Forerunners of the theoretical approach include Alfred Weber, Adams Smith, Richardo, Von Thunen and mill. The analysis is structured around three approaches to industrial location theory.

1. The Least Cost Approach which attempts to explain location in terms of the minimization of factor costs.
2. Market Area Analysis where there is more emphasis on the demand or market forces.

3. Profit Maximization Approach which is the logical out come of the earlier two.

Adam Smith, in his theory, assuming a profit maximization objective, propounded that the most profitable location for a firm will be where total revenue exceeds total cost by the greatest amount.

The diagram below, according to Weber, present cost-price situations in a simplified and very useful way.

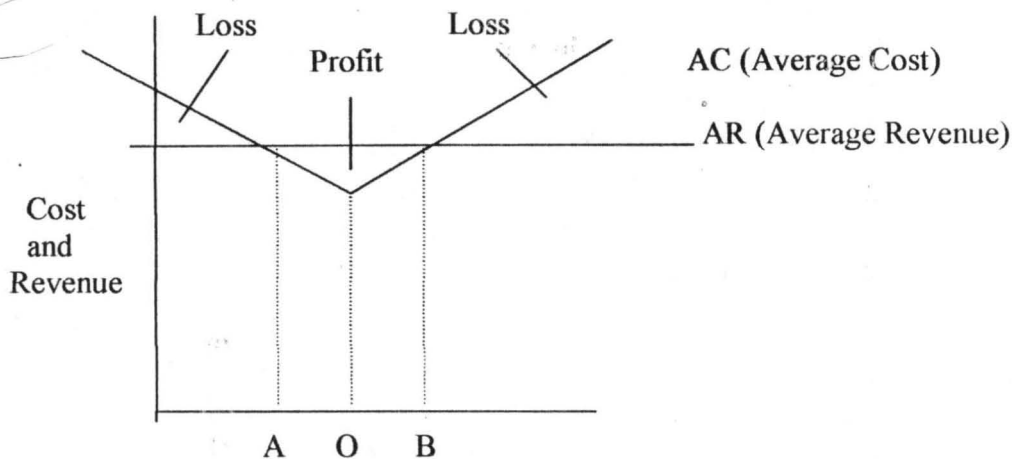


Fig. 2.1 Source: *Weber (1909)*

In the above diagram, profitable locations lie between points A and B but O is the optimum.

Alfred Weber's basic principle was that a businessman would choose a location where his cost was least. For the purpose of his model, Weber made the following simplified assumptions:

- a) The unit of study is a single isolated country, homogenous in climate, with consumers concentrated at certain given centers, conditions of perfect competition are implied with all firm having access to unlimited markets;
- b) Some natural resources such as water, sand and clay are widely available;
- c) Other minerals such as mineral fuels and ores are sporadic with availability limited to a number of sites;

- d) Labour is not widely available with several fixed labour locations and fixed labour mobility.

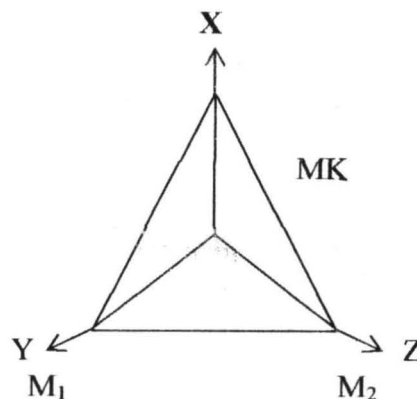
With these assumptions, Weber believed three factors influence industrial location. These are, transport costs, labour costs and agglomeration or deglomeration forces.

Weber first considered the impact of transport costs. He assumed transport costs to be directly proportional to distance moved and weight carried. Thus, the point of least transport cost is at which the total weight movement of assembling inputs is at a minimum. He illustrated the concept using his famous **LOCATIONAL TRIANGLE**, where the optimum location (T) is a balance between the forces exerted by the material sources ( $M_1$  and  $M_2$ ) and the consumption point (C). To indicate where the optimum location was closer to the source of materials or the market, Weber devised a material index.

$$\text{Material Index} = \frac{\text{Weight of Local Material Inputs}}{\text{Weight of Final Product}}$$

If the index was greater than 1, the firm was material oriented. If the index is less than 1, it was market oriented.

### LOCATION TRIANGLE



T = Optimum Location;    y, x, z = Weight of inputs and outputs;    MK = Market;  
 $M_1, M_2$  = Material Resources;    a, b, c = Distance between location, inputs and materials.

**Fig2.2**      *Source: Webber [1909].*

According to Weber, labour costs as a factor can attract a firm to a location other than the least transport cost if the savings in labour costs per unit of output are greater than the extra transport cost per unit involved. This is illustrated below where T is the point of least transport cost and the contour lines (isodapanes) show the increase in the unit transport cost away from this point. L is a labour market where labour costs are E2 per unit less than that at T. As L is within the critical E2 isodapane less than T, the firm would, other thing being equal, substitute between transport costs and no-transport cost and divert its location to a new location at this point of reduced labour cost.

### IMPACT OF LABOUR COSTS ON LEAST COST TRANSPORT LOCATION

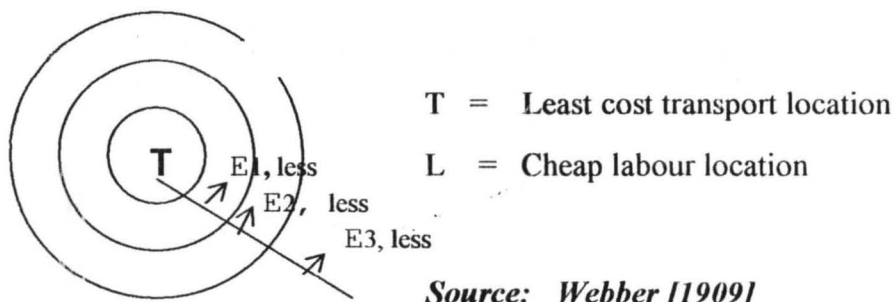


Fig 2.3

Source: Webber [1909]

Similarly, a firm may be diverted away from the least transport and labour cost locations if cost economics can be achieved through the third location factors of agglomeration. The advantages of agglomeration might include the development of a pool of skilled labour and the establishment of specialist services. Although, of course, there may also be diseconomies such as rising land prices and congestion which may eventually encourage deglomeration.

#### 2.2.1 Neo-Classical Theory As It Affects Locational Factors

Neo-classical theorists have explained how the old model of "Market Determination" of location is distorted by large companies. This is made possible by the realization that

many of the functions once performed by market exchanges of linking together plants, offices and laboratories directly under one organizational system has been taken over by other factors. That is, industries requiring special technical services may not necessarily be located in a big city but under a single organizational system with other large firms requiring similar services.

An aspect of the neo-classical theory focuses on "Exchange", not production. This exchange happens in the industrial plants which serve as a "Black Box" into which enters factors of production and out of which comes final goods. This aspect also regards production as the simplest kinds of "Production functions" that allows for the smooth substitution of one input for another according to marginal cost differences. It also emphasizes how the output of one industry becomes the input of another industry. For the economical exchange of these output-inputs, such industries should be located in the same region in order to raise industrial productivity, not minding the alternation in the factor demand and locational preference independent of the government policy.

Neo-classical models of location also describe essentially "Stetic Pattern" of the allocation of a given stock of industrial plants and equipments. Government policy cannot therefore hope to re-arrange the stock of industries. It can only redirect the flow of investment so that a new pattern emerges over time.

The focus of Industrial factories is "Commodity Production". In making an investment, most attention goes to the kind of product, its production cost and its marketing future. Location of plants is something of an after thought, more of a result of the pattern of industrial production than an independent decision. The locational incentives of

government policy maker are therefore manipulation of secondary variables in the process of locational changes.

As means of access to factors (Land, Labour, Materials, Capital) and markets, transportation has always been a staple of neoclassical location models. The model further stated that although transportation is important in the location of an industry, the transport determination model are seriously misleading because linkage analysis in locational theory argued that one also has to look at the following;

- i. Communication and flow of information.
- ii. The technical inter-connection of related production process at different locations.
- iii. Access to direct labour services
- iv. Financial Flow
- v. The organizational channels of the industry that serve all these purposes.

Neo-classical theory treat "labour" like any other inputs but seriously speaking, it is not same. Employers need to pay attention to industrial locations in places where labour are less organized more pliant and politically inexperienced because workers, like machines and materials are always alive, conscious and capable of resistance.

Thus, any government policy on industrial development that under-rate the importance of labour and labour conflict, will commit many mistakes and play a definite political role by drawing industries away from traditional urban strong holds to socially and politically conservation development zones.

All the above theories can be said to have been put into consideration as factors before the location of industries because all the factors are present in the study area.



### **2.3 EVOLUTION OF INDUSTRIALIZATION AND INDUSTRIAL ESTATE**

The evolution of industrial estates is a consequence of government policy and activities in the economic and social affairs of their countries. This influence of government in location matters may be incidental or deliberate. It may for instance occur as an unintended by-product of legislation designed primarily to achieve other aims, or it may be deliberate intervention for a number of reasons.

Also, in the Conalikim of economic growth, the alternation of industrial structure often leaves behind standard areas, whose plight calls for outside intervention. Such governmental influence in specifically geographical matters can be either positive or negative in nature. On one hand, it may encourage new industrial growth or development; on the other hand, it may inhibit them. Thus, a given industrial enterprise may owe its location partly to government influence, either positively because original advantages were augmented by government activity, or negatively because another more attractive location had to be passed over.

It was the adverse impact of the great depression of 1929 –1936 on regional economic development that compelled the British government to take a direct hand in the location of industries. In 1932, 2,000,000 workers, one fifth of the insured labour were unemployed, a total which concealed acute local variations.

The coalfields with declining staples had little attraction for new enterprises, and to alleviate the hardship in these areas, the government took its first major step to influence the location of private industries. The government made a special area act of 1934 which aimed at improving the depressed areas but the activity suffered from lack of financial support until 1936 when action was taken to assist firms willing to start in the special

areas. From 1936 onwards, Trading Estate (later called Industrial Estates) were created for industrial uses. The creation of industrial estates alleviated the condition of employment.

### **2.3.1 Industrialization in Nigeria**

Since the end of the Second World War, there had been a growing awareness in Nigeria of the need to improve the lot of the country through industrialization. It was widely accepted that the way to any country's economic development lies in the country's economy, so Nigeria like many other developing countries need to embark on industrial development policy so as to increase the economic sector of the country's economy.

In her first development plan of 1962 – 1968 industrialization was regarded as one of the priorities of government. It was believed that the industrial development in Nigeria would improve the economic life, technical development and social life of the people. The policy was prompted by the urgent awareness of the income fluctuations in the agricultural product such as cocoa beans, hide and skin, palm product and rubber which were basically the major export to the world market. Beside that, the importation of manufactured goods from developed countries was causing a chronic trade deficit in the country's account. Also, the threat of environmental problem was another serious factor militating against the country's economy. On the international level, the arce for industrialization was based on objective bordering on political as well as technological supremacy.

However, with the industrial policy set, effort were intensified for the realization of the under listed goals.

- a) Contribution which the project is likely to make towards the nation's economic development include, the generation of income and payment.
- b) Capacity of each project to utilize local materials.
- c) Prospects of manufacturing import substitutes locally.
- d) Prospects of opening up new fields of activities whether by forwards linkage or backward linkages.
- e) Opportunity for training Nigerians on the job for managerial and higher technical grades.

In setting the machinery for industrial take off, a body, known as "Industrial Development Corporation" (IDC) was set up for the implementation. This they did by creating conducive atmosphere for industrial resolution. Among the I.D.C. effort include:

- a) Invitation of Foreign Investors to the country to tap the agricultural potentials in processing activities.
- b) Establishment of necessary infrastructural facilities for industrial take off. These include industrial layout, electricity power supply, potable water, communication network and good roads.
- c) Establishment of industrial loan scheme for industrialists.
- d) Introduction of tax relief to new industries.

The 2<sup>nd</sup> and 3<sup>rd</sup> Development Plans follows suit. In the 4<sup>th</sup> Development Plan 1981 – 1985, it was recognized that, for a development, industrialization is essential for rapid economic and social transformation, so, further encouragement was directed towards the realization of industrialization in the country.

Despite all the effort to attain an encouraging position in the industrialization of Nigerian, many factors marred the progressive inspiration of the programme. These factors include:

- a) The political instability in the country. There was a consistent change in the leadership of the country. This resulted in the changes in ideology and non-continuity in the programme of the preceding government.
- b) The boom in the revenue accrued to the government as a result of oil glut in the world market. Oil product is the only income yielding product in the country, it constitutes about 80 – 85% of the national income .
- c) Another factor is the inadequate and poor infrastructural facilities e.g. electricity supply, potable water, communication, transportation etc.

### **2.3.2 Industrial Estate**

The evolution of the activities of the large manufacturing industries from the colonial era to post-colonial era and the oil boom era led to the establishment of industrial estate. Manufacturing industries sprang up as a result of the economic impact of the oil boom. In ensuring a healthier environment and prevention of indiscriminate spatial location of industrial activities, the government made provision for special area for industrial activities, the government made provision for special area for industrial uses (industrial estate) buying the idea from the British government that colonized Nigeria.

Nigeria are as follows:

1. To achieve a balanced distribution of industries that take cognizance of resources and infrastructures.
2. To obviate the haphazard location that characterized unplanned industrialization.

3. To accelerate growth of industries through the provision of land at low cost on industrial estates.
4. To strengthen the economic base of both the urban and rural areas.
5. To ensure that proper relationship exists between an industrial estate and the rest of the settlement such as commercial, residential estate and the rest of the settlement such as commercial, residential, recreation and other areas.
6. To industrialize the depressed areas lacking in industries in order to provide more jobs in the area where they are sited.

The methods employed by the government (Local, State or Federal) to influence the location of industries and to re-direct new industrial establishments to selected and predetermined "Development Area" are as discussed earlier. Others include:

1. The provision of factory accommodation, especially on industrial estates developed by the government.
2. The conduct of research and provision of information to industrialists on locations and sites available particularly for the small and medium scale industries which cannot afford the resources necessary to conduct an exhaustive survey of possible locations and sites e.g. Federal Institute of Industrial Research, Oshodi (FIIRO).
3. The use of negative development control measures such as the use of Industrial Development Certificate. Any proposed industrial building of significant size has to obtain official approval (Industrial Development Certificate) before building operations could thus be prevented at a certain point hence the acceptance of the Industrial Estate as the last resort.

### **2.3.3 Industrial Development in Nigeria**

Industrial development in Nigeria on any significant scale is of very recent origin. Some industries however existed during the pre-colonial period. Some of these crafts industries producing items of daily need. Some of these craft industries did not survive the competition of imports and colonial regulations which greatly discouraged industrial development. The economy of the country was made to concentrate on the production of a wide variety of raw materials for the British Industry. Most of the Manufacturing Industries set up before the Second World War were, therefore, valorization of export commodities. Valorization involved the carrying out of initial processing of raw materials with the objective of removing waste matters, improving the quality or converting the produce into a form in which it could be more easily stored and transported to where they will be exported. This consequently resulted into the establishment of cotton ginneries vegetable oil mills, fruit canning factories, leather tanneries, sawmills, rubber processing factories as well as facilities for the beneficiation of tin ore.

Preparatory schemes for industrial development of the country began soon after the Second World War. In 1946, a Department of commerce and Industries was set up. The industrial Branch of that department was charged with responsibility of investigating, by means of a progressive series of experiments, pilot schemes and full-scale operations, the potentiality of new secondary industries with particular references to the prospect of commercial success; developing industries already in existence by the application of modern techniques; affording all possible assistance and advice to Nigerian Industries and to bodies such as the Regional Production Development Boards and the Development

(Loans) Boards in their industrial techniques; and creating opportunities for Nigerian to acquire, manage and staff their own ventures in the industrial field.

To fulfill these objectives, the department conducted investigations into a number of proposals some of which originated within the department itself. Some others, which were suggested by one of the Regional Production Development or Development (Loans) Boards or by another Government Department or by a Nigerian Industrialist. If the investment proved that the project was feasible, a pilot scheme would be started with the view to testing the possibility of full-scale operation.

The Nigeria Industrialists might then be invited to participate or might grant from the Regional Loans Board or the Colonial Development Corporation, and operate in their own account. The result of these efforts soon began to show as further mechanization of the processing of export was soon accompanied by the growth of factories manufacturing for the local made goods which had hitherto been imported.

By 1951, there were few major industrial establishments in the country, these included the plywood and veneer factories at Sapele, the cigarette factory at Ibadan, three soap factories at Apapa, Aba and Kano, a brewery at Apapa, a metal container factory at Apapa, several cotton ginneries in Northern Nigeria, Vegetable Oil Mills in Northern and Eastern Nigeria, a tyre-retreading plant in Ibadan, a ceramic factory at Ikorodu and two weaving mills, one in Lagos and the other in Kano. There were, in addition, some public utilities such as electricity plants, the Nigerian Railway Workshop, the public works department mechanic workshops, the government printing works and the marine dockyard, wharves and port installations located in a few urban centers, particularly, Lagos.

Other numerous industries the country could boast of are those that are in the small-scale category which were owned stores, laundries, corn mills, mineral waters, printing works and fruit-juice factories.

#### **2.3.4 Industrialization in Ogun State**

Ogun State was created in February, 1976 from former Western State of Nigeria. The Capital is Abeokuta. The economic activities in the State include agriculture, mining, quarrying, manufacturing and related business. Initially, industries were located sparsely in the State at the time of its creation.

Before the creation of the State, the Western Nigeria Development Corporation (WNDC) was responsible for location of industries some of which are jointly owned by five State namely: Oyo, Ogun, Ondo, Ekiti and Osun States. Examples of such industries are West African Portland Cement Factories at Ewekoro and Sagamu respectively which were located in Ijebu Ode, Abeokuta and Sagamu before the creation of Ogun State.

However, with the new inspiration in the location of industries by both private and public sectors, industrialization began to manifest in the state. Ijebu-ode, Abeokuta, Sagamu and Ota industrial estates were established by the Ogun State government shortly after its creation while Agbara estate was established by a private sector operator. Recently, Ogun State Property and Investment Corporation have also established an Industrial Estate at Agbara.

Industries are also located at strategic locations in the State notable among these is Iwopin Paper Mill located at the water side area of the State. Privately owned textiles factories are also located at Ijebu Igbo and Aiyeye respectively. Many other small scale industries are also located sporadically within the State.



Ota has the highest concentration of industries. Apart from the Ogun State Housing Corporation Industrial Estate, Ota still boasts of four other major locations in terms of concentration and this makes it to be the most industrialized town in Ogun State.

## **CHAPTER THREE**

### **METHODOLOGY**

Basic data are very important for any planning research. Lack of basic knowledge of the area one is planning for, is like a farmer without tools. Therefore, the necessary primary and secondary data were collected for the study.

Primary data involved the administration of questionnaires and base maps on the study area. The questionnaires are formal type aimed at finding out the background of the industries. Housing and household survey was also carried out within the vicinity of the industrial areas. The base map was used to identify the boundaries of the study areas and updated through reconnaissance survey.

The secondary data were collected mainly from journals, books, seminar papers, government and quasi-public agencies through official publications and literature review.

The method of analysis was based on the response obtained from the questionnaire administered which were tabulated and analysed. In all, 17 industries were selected for investigation which is about 10% of the total industries in the study area. The selection was based on random sampling method and spread to all industrial areas in the study area. About 145 residents were interviewed while 45 buildings were critically studied for housing types and conditions.

#### **3.1 CLASSIFICATION OF INDUSTRIES**

There are many ways of which industries can be classified.

These include:

1. Classification by registration

2. Classification by single/multiple enterprises
3. Classification by main/branch establishment
4. Classification by year of establishment
5. Classification by types of ownership
6. Classification by industrial process
7. Classification by types of product

For the purpose of this study, classification by industrial process will be adopted to classify the industries within the study area. In order to use this method, it is necessary to analyse the industrial undertakings as small scale or large scale on the basis of their operational characteristics and process with a view to understanding their nature and structure.

Classification of industries into large and small scale is sometime done by the use of measures such as capital investment, floor space occupied, power consumption, turn over of valued added. Because of the difficulties involved in the use of the above mentioned criteria, the average number of full time employees of industries will be considered in this study. The information for this option will be obtained by the use of questionnaire administered in the industries.

Apart from the above mentioned criteria, large manufacturing industries are also examined. These are industries that employ not less than 100 full time workers and also engage in manufacturing and processing of finished products from raw materials with the help of plants, machines and equipments.

Using the above criteria, there are many large scale industrial establishments in the study area but for the financial and manpower limitations of the researcher, questionnaire could

not be administered on all the industries and as a result, certain percent (10%) of the industries were interviewed.

The impact of existing industries on transportation and communication will be examined. This will be done through personal observation, the morning peak and evening peak will be observed. Also it is pertinent to note how the road network and the provision of communication facilities like telephone and posted services facilities easy intra and inter city communication in the area.

The socio cultural impact of industrial development on the aesthetics and cultural concerns of the citizenry will be known and how it affect the historical background of the people.

Also the impact of industrial location on the natural environment will be examined. This will be done through classifying the forms of waste into the following.

- Solid waste
- Liquid waste
- Gaseous waste
- Inorganic waste
- Organic waste

17 industries will be covered and the number of industries producing waste will be shown in tabular form. This will be shown graphically through bar graph.

### **3.2 EXISTING FACILITIES & INFRASTRUCTURE**

Through field survey the existing facilities such as water, generating set, electricity etc. will be examined, also infrastructural facilities e.g. Road electricity, drainage and

telephone will be examined. The existing facilities and infrastructure will be in tabular form and it will be shown graphically.

Recommendations will be made to normalize any abnormality discovered in the course of study. This will include the facilities and services in the area, waste disposal, influx of people to the area, manpower and improvement in agriculture to large scale with the study area.

## CHAPTER FOUR

### PRESENTATION AND DISCUSSION OF RESULTS

This section analyses the findings carried out for the purpose of this project. The survey covered variables such as source of raw materials, housing, infrastructures, socio-cultural features and others.

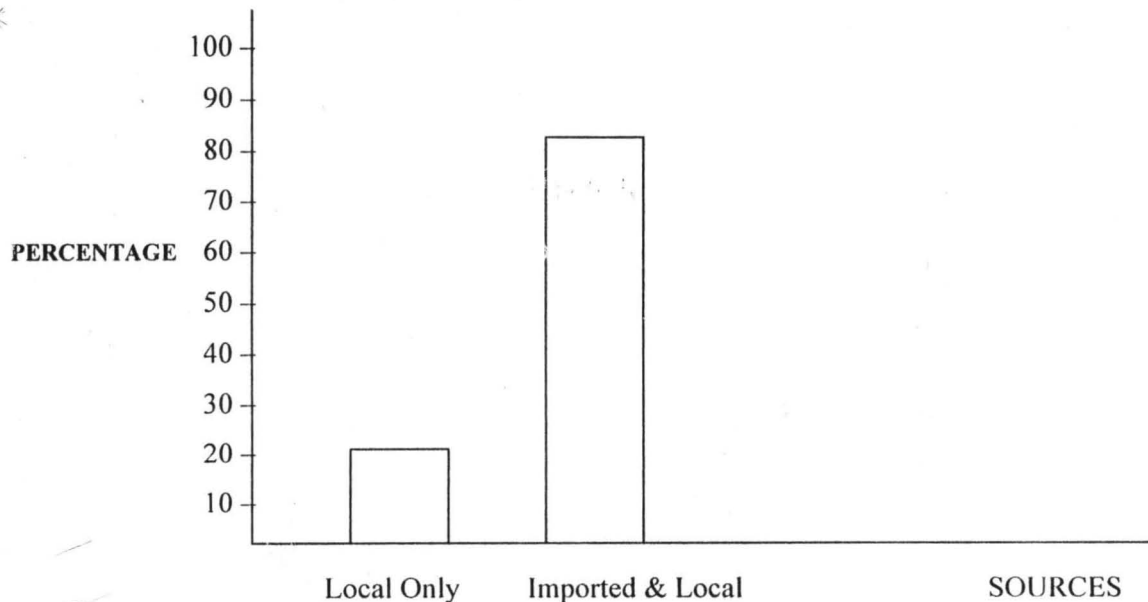
#### 4.1 RAW MATERIALS AND SOURCES

The detailed knowledge of the basic inputs in terms of raw materials of the respective manufacturing industries is beyond the scope of this study. Table 4.1 below reveal that only three out of the selected industries surveyed depend solely on local raw materials. None local and imported raw materials and about 82% make use of both local and imported materials.

**Table 4.1: SOURCES OF RAW MATERIALS FOR INDUSTRIES**

SOURCE	NO OF INDUSTRIES	PERCENTAGE OF TOTAL
Local Only	3	17.647
Imported & Local	14	82.353
<b>Total</b>	<b>17</b>	<b>100</b>

*Source: Field Survey, January 2007*



**Fig. 4.1** *Sources of Raw Material for Industry*

It is pertinent to note that none of the industries surveyed source their raw materials within the study area except Federated Steel Industries that make use of metal scraps as inputs.

The raw materials are transported to the factory from the seaport and other materials sources within the country through articulated trucks that are usually hired.

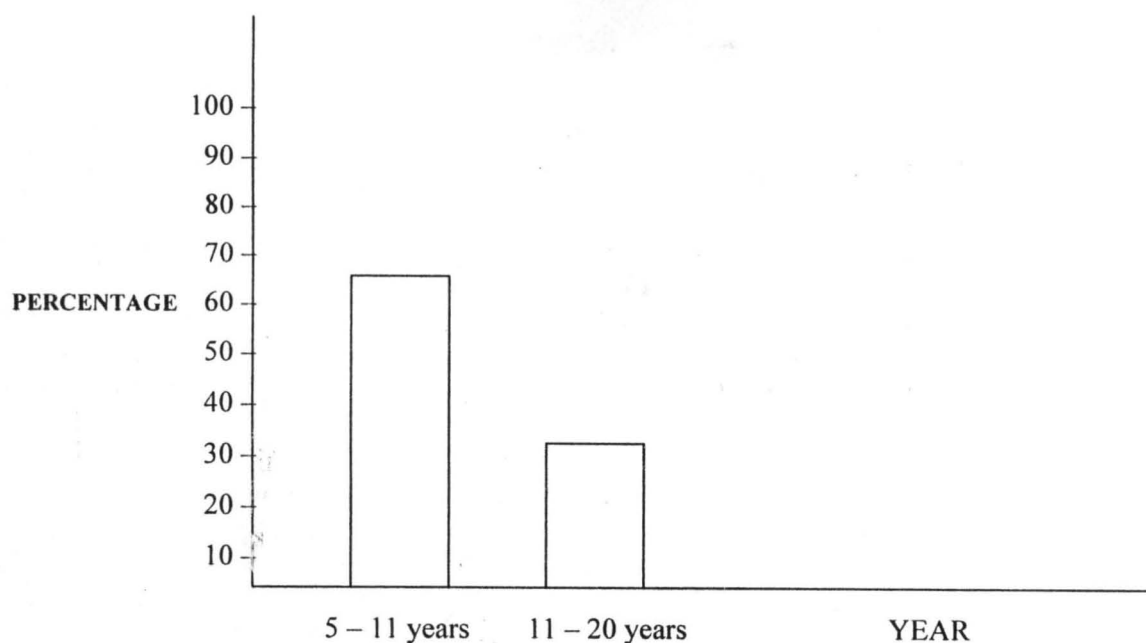
It is equally important to note that the outputs of some industries are the inputs for others. The industries enjoy external economics of scale amount themselves in terms of raw materials. Notable example of industries whose outputs or products are inputs for other industries are Eagles Package Industry, Diversified Packaging Industry and Avon (Cork and Seal) Industry, whose product are inputs for industries such as Food Processing Industries and Brewing Industries outside the study area also enjoy these external economies of scale.

Although the study area has been experiencing economic development through the basic and secondary industries, it recorded a relatively little growth a decades ago. The development of industries in the recent years in the study area brought about a significant economic growth in the area. The table below shows the selected industries by their year of establishment.

**Table 4.2 Industries by their Year of Establishment**

<b>Year Established</b>	<b>No.</b>	<b>% of Total</b>
Less than 5 years	-	-
5 – 11 years	11	64.706
11 – 20 years	6	35.294
<b>Total</b>	<b>17</b>	<b>100.00</b>

*Source: Field Survey, Jan.2007*



**Fig. 4.2** *Industries by their year of Establishment*

The employment survey reveals that none of the selected industries employ less than 50 workers hence it can be rightly said that all the selected industries are large scale industries. Nine of them have less than three departments and about 70% has operated shifts. Out of the ten industries surveyed, only one (Sona Breweries) has residential quarters for senior staff.

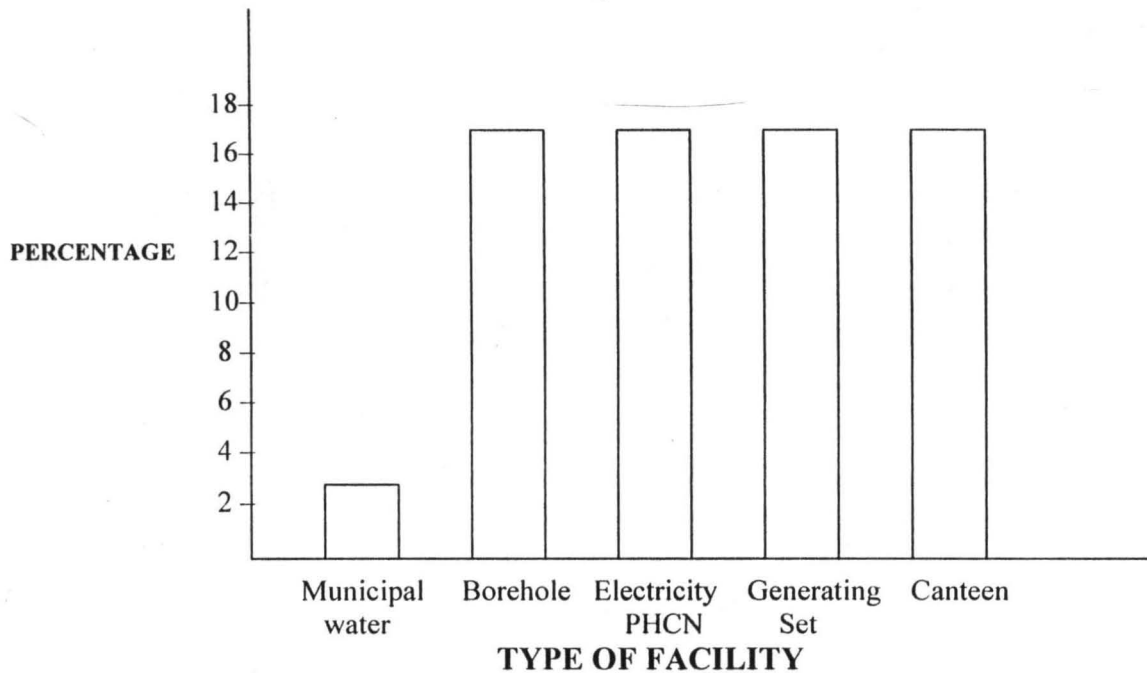
The survey of provision of facilities within the industrial premises of the selected industries reveal that only 2 are connected to the public water supply in addition to boreholes constructed. Infact, all of the industries surveyed has boreholes as well as standby generating sets in case of power failure. The table below analyses the facilities provided within the industries surveyed.

**Table 4.3: Facilities within the Industries**

Type of Facility	No. of Industries	Percentage of Total
Municipal Water	2	3
Borehole	17	100
Electricity (PHCN)	17	100
Generating Set	17	100
Canteen	17	100

*Source: Field Survey, Jan.2007*





**Fig. 4.3 Facility within the Industry**

Infrastructural facilities include road, electricity, drainage, pipe borne water and telephone to name a few. More roads are being open up especially in the newly developing residential areas and within the industrial areas. The roads within the Ogun State Housing Corporation Estate are well defined and the major road that links the Estate to Idiroko road is tarred. Accessibility is one of the factors of industrial location and it has served as one of the factors that attracted industrialists to the study area. Accessibility is of immense importance to industries especially during the process of assembling inputs from various sources and in the course of the distribution of finished products to various markets.

There had been improvements on the roads in the recent times. The internal roads were graded recently by the Local Government while the major roads such as Lagos – Abeokuta road, Ota-Idiroko road and Ijoko road are undergoing rehabilitation works. It was however, discovered from the survey conducted that only 2 of the industries

thereby making them ineffective for example electricity power supply and public water supply.

#### **4.3.2 Impact on Rent**

It has been mentioned earlier that industrial location attracts population. This has increased the demand for accommodation and with respect to the law of demand and supply, has resulted in increase in rent. From the field survey, it was discovered that a 3 bedroom apartment is being let out at between ₦4,000.00 and ₦6,000.00 while a single room is being let out at between ₦700 and ₦1000.00 in and around the vicinity of industrial location areas. The variation in the rent depends on the location and facilities provided within the houses. It is pertinent to mention here that resident around the industrial areas pay higher rents than those that leave far from the industrial areas.

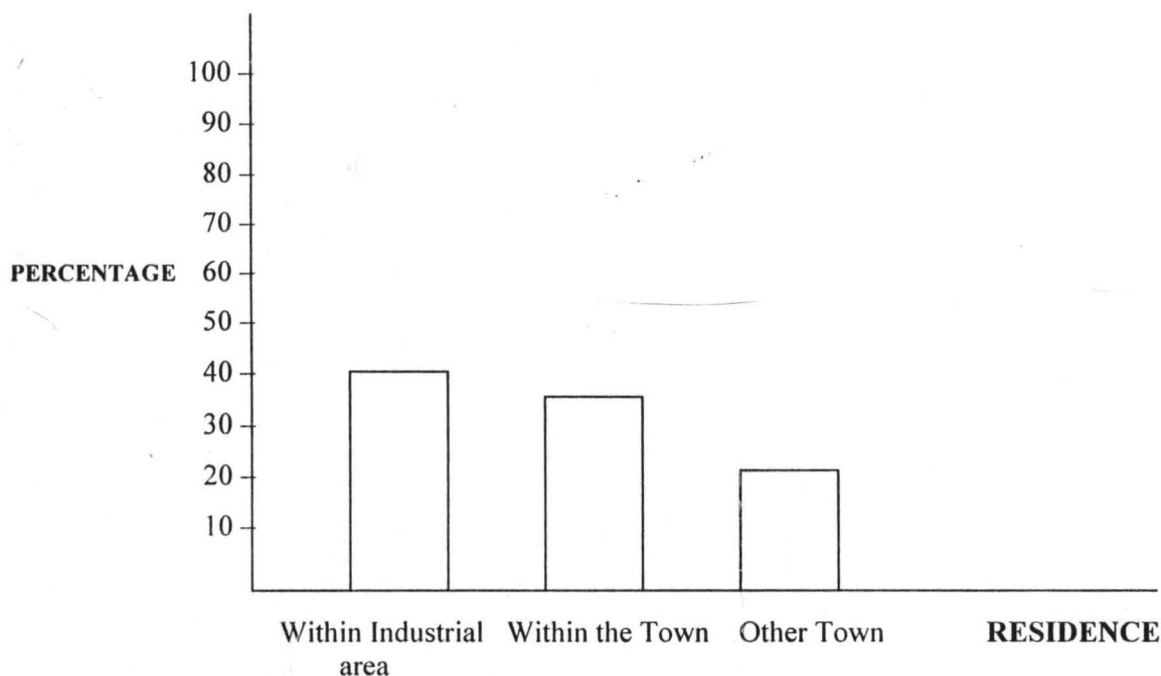
As a result of a higher rent paid around the vicinity of the industrial areas, a household of 6 members usually occupy 2 rooms (a room and a parlour). This is common among low income earners because their income cannot support a bigger apartment.

In the household interview conducted in the industrial areas, it was discovered that about 45% are junior workers in the industrial living within the industrial areas; about 20% are senior/middle level workers while the remaining 35% engage in other vocations. Table 4.4 shows the analysis of the industrial workers interviewed reflecting their place of residence.

**Table 4.4 Industrial Workers by Residence**

<b>Residence</b>	<b>No. of People</b>	<b>Percentage of Total</b>
Within the Industrial Area	60	41.379
Within the Town	54	37.241
Other Towns	31	21.380
<b>Total</b>	<b>145</b>	<b>100.00</b>

*Source: Field Survey, Jan.2007*



**Fig. 4.4. Industrial Workers By Residence**

### **4.3.3 Impact on Housing**

Industrial development and housing go side by side because the industrial workers will need to be housed. The industrial location in Ota has initiated the influx of population from both the rural areas and the surrounding urban centre into the study area. The increase in population has to be housed and as a result, private developers sees this as an avenue to make money in form of rent and hence engage in building development. The

area has witnessed additions to housing stocks of higher standard as against the mud housing construction method. Because of the different classes of workers (high income, medium income and low income earners) attracted to the area, there is a shift from the common Brazilian type of housing construction to duplex and flat designs of housing units to meet the taste of various levels of income earners attracted to the area.

Three types of housing are identified in the study area. They include the poor, the fair and the good types. Those that fall in the poor category are the house that are lacking in facilities such as toilet, bathrooms, kitchen. Most of them are of mud walls and very old and weathered galvanized roofing sheets. This type of buildings can be found in the older part of Ota.

The second category is those that are classified fair because they have toilet and kitchen which fall short of the required standard. A residential building of four habitable rooms should have at least one kitchen, one toilet and one bathroom. Majority of houses in this category are constructed with concrete blocks and of galvanized roofing sheet mostly Brazilian types.

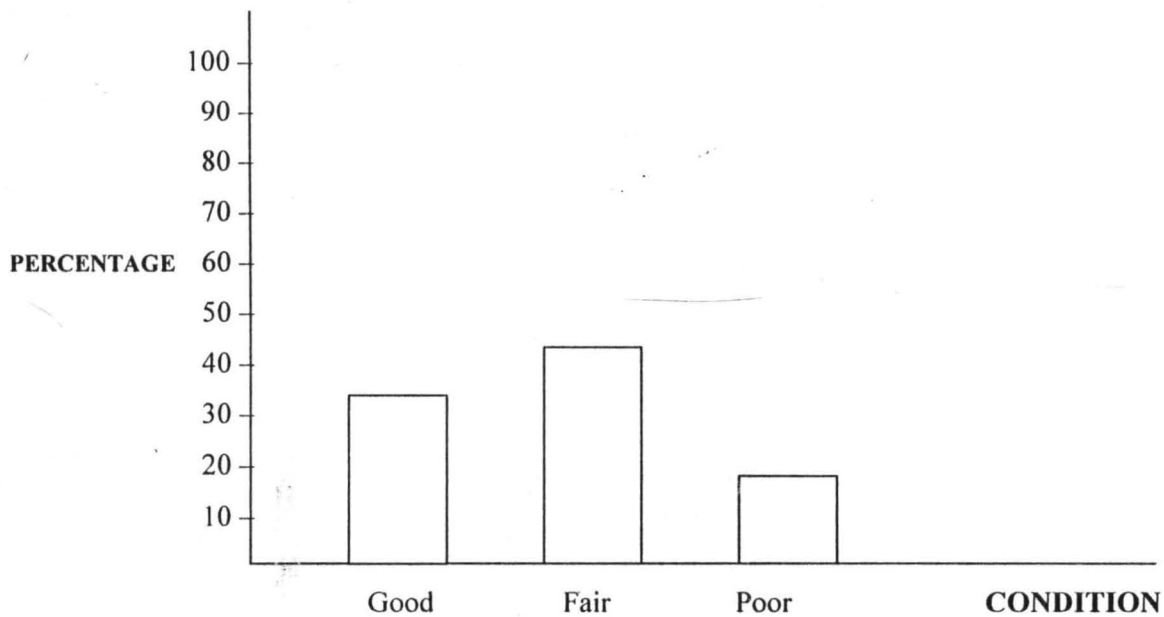
The third category, the good, is those that consist of various designs and also having relatively adequate facilities. Many of them are of asbestos roofing sheets and of good standard in terms of construction materials and planning standards.

The table 4.5 analyses the housing type and their proportions to the total housing units surveyed.

**Table 4.5 Conditions of Buildings**

CONDITION	NUMBER OF BUILDING	PERCENTAGE
Good	15	33.330
Fair	20	44.450
Poor	10	22.220
<b>Total</b>	<b>45</b>	<b>100.00</b>

*Source: Field Survey, Jan., 2007*



**Fig. 4.5 Condition of Building**

From the table, it can be deduced that majority of the buildings in the study area are fair, constituting 44.45%. When this is merged with those that are in good condition (33.33%), it can therefore be said that housing condition in the study area is relatively good and that industrial location has improved the standard of housing construction in the study area.

#### 4.4 ECONOMIC IMPACT

Prior to the industrialization of the study area, agricultural had been the main source of economic growth. The location of industries in the study area has changed the economic base from agricultural to industrial and industrial related activities.

Industrial location has brought about an increase in the household income and thereby increasing their purchasing power. Creation of new job means better purchasing power and a corresponding increase in the economic level of the state through Pay As You Earn (PAYE) Tax and other rates on rentable properties. A multiplier effect also set in and a new industrial job carries with it several openings in allied services industries. In the developed countries, it is estimated that a new industrial job carries with it between 2 and 3 jobs in such diverse field as hotel, restaurant, construction industries and others (Adediran, A.G. 1990).

The industries also attract other unemployed people from the surrounding areas. The formerly unemployed and under-employed people could now find jobs in the industries and other related service industries. Industrial locations in the study area has also gone a long way at solving the problem of the population pressure in the rural areas as the able bodied men and young women who could not find viable jobs in the rural area have migrated to the urban centres to seize the opportunities of employment within the industrial environmental thereby living old men and women on the farms. The implication of this rural – urban drift is the reduction in food supply to the urban centers and a distortion in the rural-urban dependency because the urban centres depend on the rural areas for the supply of food stuffs and other agricultural products. This decrease in the price of the products at the urban centres where the demand for them is higher and

consequently an increase or improvement in the economic power of the rural dwellers because of the increase in the effective demand and purchase of agricultural products.

As mentioned earlier, industrial location has also brought about an increase in the real estate values for the government. Changes in land values, taxes and car registrations have also increased the revenue accruing to the government.

Because of inadequate provision of pipe borne water, all the industries surveyed have boreholes within their premises. Although, there is a municipal supply provided by the Ogun State Water Corporation sourced from Iju stream to service the area, it is inadequate to meet both domestic and industrial needs. Taps are dry for days on many occasions and since water is a daily need, alternative sources will have to be looked for. Many private buildings within the area have boreholes and deep wells. This emphasizes the gross inadequacy of public water provision within the study area. A drum of 200 litres of water sold by tankers costs between N100.00 and N150.00. Sales of water by private owners of boreholes and deep-wells are a lucrative business within the study area.

#### **4.5 PHYSICAL IMPACTS**

Physical impacts as regards this section mean the effect of industrial location on the physical environment of the study area. Physical environment comprises building development of various uses, such as roads, vegetation, relief and other visible developments. The impact of industrial location as it affects the physical features in the study area is measured in this section.



*Plate 1.1 Lagos-Abeokuta Expressway*



*Plate 1.2 Refuse dump at Joju in Ota*





*Plate 1.3 Liquid waste disposed into stream in Ota*



*Plate 1.4 A road in Ota*

#### **4.5.1 Drainage**

The terrain of the study area allows for natural drainage of storm water into the streams and rivers but the industrial, residential and commercial developments have altered this natural drainage channel. The vegetation removal and pavements has also increased surface run-off of storm water. This has dictated the need for the construction of drainage channels.

Drainage is constructed along some industrial roads and within some residential districts to cater for both the industrial and domestic liquid waste and storm water which are channelised into streams and gorges. For instance, Hong Kong Synthetic Textiles Industry and Sona Breweries use a lot of water for dyeing and washing respectively and cannot be accommodated in their premises and hence channelised to streams and gorges. Hong Kong has an underground drainage from their industrial premises which drains into open drainage at Oju Ore and to Otun gorge. Offensive odours usually emanate from this water in the areas it passes through. Similarly, Sona Breweries drains liquid waste through an open drainage to a stream at Owode Village. Like its Hong Kong counterpart, offensive odours emanate along the route of this drainage.

As a result of lack of comprehensive drainage system some area, such as Ajegunle, Araromi, Joju and other area are usually flooded during heavy downpour.

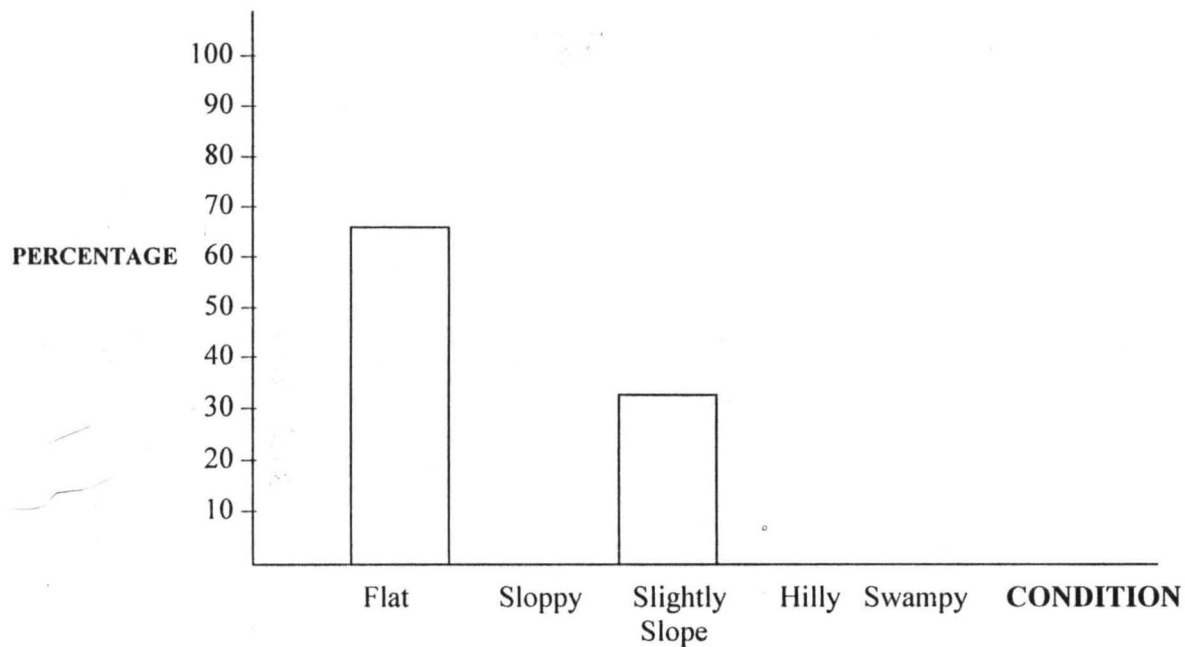
#### **4.5.2 Relief and Vegetation**

The topography of the study area has been affected as a result of the industrial location; a relatively flat terrain is conducive to industrial development. The table below reflects the analysis of the topographical condition of the industries.

**Table 4.6: Topographical Conditions of Industrial Areas**

Condition of Topography	Number	Percentage (%)
Flat	11	66.706
Sloppy	-	-
Slightly slope	6	33.294
Hilly	-	-
Swampy	-	-
<b>Total</b>	<b>17</b>	<b>100.000</b>

Source: Field Survey, Jan.2007.



**Fig. 4.6 Topographical Condition of the Industrial Areas**

The table 4.6 reveals that none of the industries is built on a sloppy terrain and that about 65% are built in a flat terrain and 35% on a usually shy away from hilly terrain because

of the nature of activities of industries. If the need arises for an industry to be built on a sloppy land, extensive grading and leveling will take place prior development.

The urge for central location of developments has resulted in many marshy lands to be sand filled for various developments. A typing example is a petrol filling station under construction between Jordan Hospital and Obanibasiri Complex. The area used to receive the run-off from the surrounding areas. Now that it is sand filled and developed, the result will be a back flooding into the surrounding residential areas since water will always find it level.

In essence, the natural terrain has been tampered with. Many natural features that had been of aesthetic visual vista had been removed for industrial and residential development. Those areas that had earlier been tagged undevelopable have now been put to intensive use.

The development of industrials had resulted in the removal of vegetation and the depletion of rare species of plants. Those land that are formerly agricultural lands had been turned to industrial uses. This trend is going on unabated because of the urban sprawl resulting from the development of residential building around the vicinity of the industrial area thereby making the agricultural land to be farther from the urban centres. This led to increase in the prices of agricultural products resulting from increase in transportation costs of the agricultural products.

#### **4.6 IMPACT ON TRASPORTATION AND COMMUNICATION**

Circulation covers about 15% of the total land area covered by this report. This therefore, facilitates easy and relatively free flow of traffic and communication network.

The development of industries has increase the number of vehicular movement in and out of the area in order to satisfy the now increased transportation and communication need of the people in terms of trip to work , social engagements, recreation and other purposes. Industrial development itself is a traffic generator, vehicles will come in and out to deliver raw materials and pick up finish product to the various markets. This, coupled with the increase of the car ownership due to the advancement in the economic level of the majority of the people, has been responsible for the increased number of vehicles on the roads in the study area. Many of the industries also have fleet of cars to maintain steady operations.

Although, traffic survey was not conducted, personal observation revealed that traffic hold up usually occur at sango junction ( Lagos- Abeokuta /Ota-Idiroko road intersection) in the mornings and evenings due to too many vehicles converging there at this periods. The morning peak is usually from 7.30am-9.00am while the evening peak is observable between 5.30pm-7.30pm.

The morning peak occurs because of the rush to beat the resumption time of the industrial workers, government establishments and schools which is 7.00am-7.30am and 8.00am respectively. The reason for the evening peak is because most of the industries close by 5.00pm except those operating shifts. Other reason for congestion at this point is that, this area is the center peace for commercial activities in the area. The activities of the 2 filing stations (Total and national) very close to this junction coupled with the activities of the commercial passengers vehicles loading and offloading at this point also account for the traffic congestion. Motor bikes also use this point as their terminal point.

There are bad spot along the stretch of the roads due to heavy vehicles attracted to the area by industries, plying the roads as demanded by the factories.

The number of intra city commercial vehicles in the area are inadequate to meet the ever increasing demand and hence the flourishing motor-cycle commercial transportation operation in the area. They charge relatively higher rates (between N30.00 and N50.00) depending on distance and route. This can be attributed to its limited passenger capacity, relatively faster journey time and the provision of door to door services.

Industries such as International Distilleries Limited, NYCIL, Nigeria Distilleries Limited, Honda, Eagle Package, Nestle Food, Homan Industries, Federated Steel Mill, Tower Aluminum and Vego Industries to name but a few have staff buses to facilitate easy transportation for their respective workers to and from work. Some of these staff buses go as far as Oshodi in Lagos and Agbara Estate to discharge staff and also take workers from there to work for each shift of the day as most of the industries in the area operate 3 shifts.

The road network and the provision of communication facilities such as telephone and postal services facilitate easy intra and inter city communication in the areas.

Population increase resulting from industrial developments has also increased the telecommunication needs of the people in terms of postal services and telephone. These services are provided in the study area but are inadequate to meet the needs of the people. Many of the industries have their head offices in Lagos and need to communicate with them from time to time. The government postal services (NIPOST) is being supplemented by private courier services which though faster, cost more. The introduction of the GSM telephone system has gone a long way to alleviate the telecommunication problem in the study area.

This pressure results from the concentration of industries with its attendant increase in population and therefore increases in transportation and communication needs.

#### **4.7 SOCIO-CULTURAL IMPACT**

This section attempts to reflect the impact of industrial development on the aesthetics and cultural concerns of the citizenry. There has been a considerable improvement in the physical attractiveness and land marks. Buildings of architectural beauty can now be found all over the place compared to old, outdated buildings that were in existence before the industries came into being in the study area. Beautiful buildings with beautiful surroundings create good vistas which play important roles in the enjoyment of life, community pride and also give relieve from psychological stress.

Some cultural values were lost due to industrial location in the study area. Buildings of historical importance had been relegated to the background as they are no longer relevant, compared to the rate and type of developments springing up. A typical example is the formerly important "Oju Esu" at Sango junction, the existence of which people do not recognize any longer.

The influx of aliens and none indigenes to the area has also brought about cultural diffusion and social change because people from different cultural groups agglomerate and interact together. The traditional Egungun festival which is observed annually is now on the decrease and is now limited to Ota core area. However, there has been a diversified culture of Hausa, Igbo, Ebiras and others in the area.

Before the advent of the industrial activities, Ota was an indigenous town with population of about 35,523 in 1988 (Master Plan of Ifo/Ota and Environs Survey Report, 1988).

From the onset of industrialization up to the present time, the population estimated figure of 57,863 (Estimated from 1991 population census). This is due to the following factors:

- i. The influx of workers from the neighbouring towns, cities and States into the study area
- ii. The increase in industries which created employment avenues for the people.
- iii. A fall in infant mortality rate due to an improvement in the medical and health care services.

#### **4.8 IMPACT ON THE NATURAL ENVIRONMENT**

This section examines the impact of industrial location on the natural environment in the area. It should be noted that the indepth analysis of pollution and pollutants emitted by the respective industries is beyond the scope of this study but there seems no way one can observe the socio-economic impacts in isolation without reference to the environmental impacts. A similar project titled "Environmental Impact of Large Manufacturing Industries in Oluyole Estate" written by Shittu F. O. (1991). The environmental measures recommended in the project can be applied in the study area.

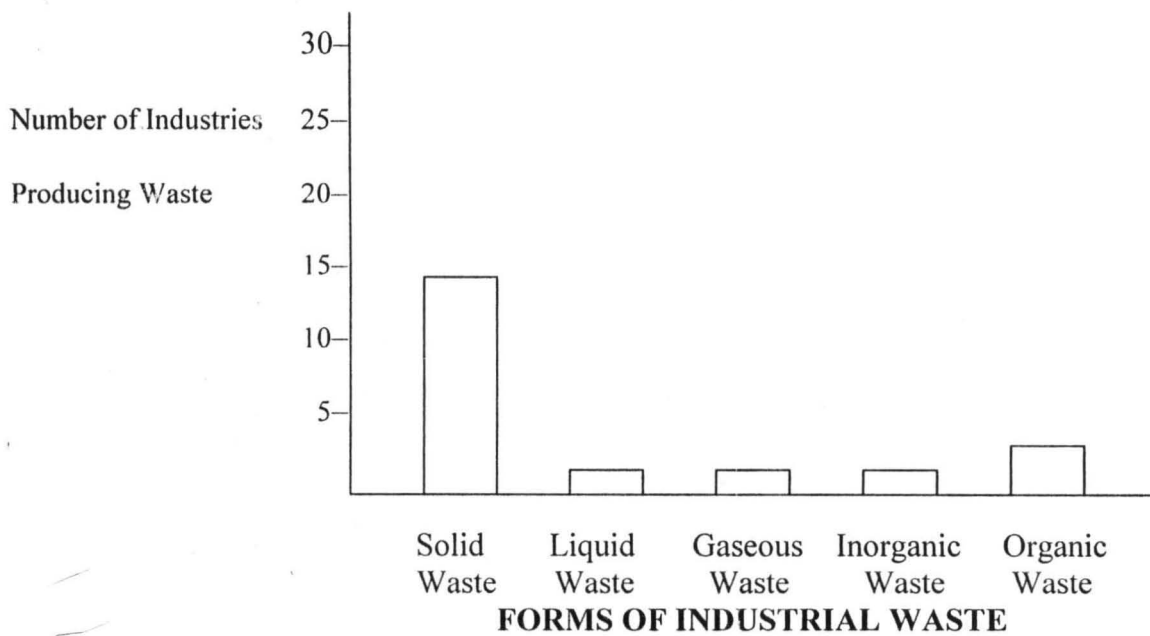
The environmental impacts of the industries will be observed collectively since detailed industry by industry analysis of environmental impact assessment is beyond the scope of this study. The table below summarizes the waste the waste generated by the surveyed industries.



**Table 4.7 Form of Waste Produced by Industries**

Forms of Industrial Waste	No. of Industries Covered	No. of Industries Producing Waste	Number of Total
Solid Waste	17	15	88.236
Liquid Waste		2	11.765
Gaseous Waste		1	5.882
Inorganic Waste		1	5.882
Organic Waste		3	17.647

*Source: Field Survey, Jan.2007*



**Fig. 4.7 Forms of Waste Produced by Industries**

In the above table, it is evident that industries generate one waste or the other and the degree vary from one industry to the other. These wastes have one impact or the other on the other on the environment.

#### **4.8.1 Impact on Water**

Industries such as Sona Breweries and Hong Kong Synthetic Industry produce liquid waste that are being discharged into streams directly or indirectly thereby polluting the surface water that is being used by some communities for domestic purposes. Suffice to say that industrial location has reduced the quality of surface water in the study area because of the liquid wastes from the industries being discharged into it. Epidemic diseases such as cholera, typhoid fever and skin diseases can therefore be caught and spread easily by those that make use of this type of polluted water. The type of epidemic diseases could have been pronounced in the study area if not for the availability of public pipe borne water which is being supplemented by privately owned boreholes and deep wells.

#### **4.8.2 Impact on Land**

The impact which the industrial development is having on land can be viewed from the perspective of land values to the abuse or misuse of land.

The influx of people to the areas as a result of industrial development has increased the demand for land also for residential developments to house the new migrants. This has however increased the value of land with respect to law of demand and the fact that that land usually appreciate in value over time. A plot of land in the area is sold for between N150,000.00 and N900,000.00 depending on location compared to between N50,000.00 and N450,000.00 about 10 years ago.

Another major impact on hand is the misuse or abuse of land. Industrial and domestic solid wastes are being deposited indiscriminately along the road side or in nearly bushy undeveloped plots. This is detrimental to the health of the inhabitants. There is only one official refuse dump (open dumping system) in the study area. This is highly inadequate

considering the volume of industrial and domestic solid waste being generated on daily basis. There are some unofficial dumping grounds whose locations are potential health hazards to the people, if this situation persists unabated. It can lead to serious epidemics in the areas.

The continuous removal of vegetation coupled with high rate of surface pavement has led to an increased surface run-off and flooding by storm water.

The consequential urban sprawl resulting from industrial developments has led to the depletion of rare species of flora and fauna and the disruption in the ecosystem.

#### **4.8.3 Impact of Air**

Industrial location has a lot of impacts on air. The solid and liquid wastes generated by the industrial developments are not adequately taken care of and consequently generate offensive odours which pollute the air. The industries also emit gaseous wastes which is related into the air and thereby polluting the environment (See Table 4.7). There are other types of emissions that pollute the air. They are as stated below:

- a) Emissions from internal combustion engines as a result of changing the number, length, distribution and mode of trips.
- b) Emissions from fuel burning within the industrial and residential developments for heating and cooling.
- c) Emissions from power plants that serve the industrial developments and some residences.
- d) Emissions from the industrial processes that are vented to the air.

All the above enumerated types of gaseous wastes exist in the study area but not in the quality to have any hazardous impact on the people. The commonest gaseous emission is carbon monoxide from combustion engines.

#### **4.9. IMPACT OF PHYSICAL PLANNING**

Planning, it is often said, is for the people and with the people a start must be established. This means in essence, that planning cannot achieve its aim without the cooperation of the people. It has already been established that industrial location has brought about the influx of population into the study area and also the increased rate of both residential and commercial developments which need proper planning in order to ensure that land uses are juxtaposed in a harmonious and efficient manner.

Personal observation and investigation from the Planning Authority reveals that urban sprawl, development of incompatible uses and over use of land developments are common in the study area especially in the commercial nerve center of Sango. Some buildings have industrial, commercial and residential activities going on within the same premises. Most of them failed to obtain planning approval before commencing development operations or conversion of the existing residential buildings to commercial or industrial uses. This does not augur well for planning.

The high rate of development in the study area has made the enforcement of development control measures more tedious, considering the staff strength of Ota Zonal Planning Authority.

In 1990, the Ogun State Government made it compulsory for land owners to prepare and approve layout in-respect of their lands before they commence the sale of land in lots.

This has been assisting in mitigating against haphazard development in the study area, especially in the newly developing and green sites.

In spite of the high growth rate of Ota in terms of population and physical development, it has no Master Plan to guide developments (infact no town in Ogun State has) despite the income accruing to the government from the area as a result of industrial location. It is necessary to mention here that an attempt was made in 1988 to prepare a Master Plan for Ifo/Ota and environs. The centre for Urban and Regional Planning (Consultancy Services Unit) University of Ibadan was commissioned to prepare the Master Plan but unfortunately it did not go beyond the survey report stage.

## CHAPTER FIVE

### SUMMARY, RECOMMENDATIONS AND CONCLUSION

#### 5.1 SUMMARY OF FINDINGS

In this project, an attempt has been made to find out whether the industrial development in the study area has any socio-economic impacts. In the study that ensued, the following discoveries were made.

It was discovered that the industries within the study area were located in accordance with the accepted economic principles (i.e. factors of industrial location). The impact assessment that followed revealed the following facts about the successes and failure (positive and negative impacts) of industrial location in the area.

##### 5.1.1 Positive Impacts

The industrial location has succeeded in achieving its aim in the following ways:

- i. The coming of industries into the study area has affected the domestic and commercial activities in the following ways:
  - a) The attraction of commercial banks into the area.
  - b) It has enhanced the purchasing power of both the natives and the new comers in the area. The effective demand has also increased the number of people engaged in trading in the area.
  - c) The income of households has also increased because a good number of members of households are in gainful employment.

- ii. Industrial location has socially achieved cultural diffusion which resulted from the mixing of people from different ethnic groups and cultural background that came to live and work together.
- iii. Attracting population away from other settlement, towns and cities within the State and the neighbouring State.
- iv. It has also increased the revenue accruing to the government through taxation and tariffs as a result of the enhanced value of properties consequential to the development of industries in the study area.
- v. It has stimulated the economic growth of the area.
- vi. Creation of general climate and conditions conducive to the free flow of foreign and local capital into industries.

### **5.1.2 Negative Impacts**

The negative impacts of industries location in the area has been discovered to be as follows:

- i. The coming of industries has resulted in the influx of too many people into the area, thereby causing over crowdedness, crimes, traffic congestions and on street trading.
- ii. Considering aesthetic and environmental impact, it was discovered that there is no proper waste disposal and waste management system. The Domestic and Industrial Solid waste are disposed indiscriminately and offensive gaseous odours are release into the atmosphere in the course of the process of decomposition of the wastes.
- iii. Industrial location has brought about increase in the land value thereby preventing a good number of people from being able to purchase a piece

of land for developmental purpose. A few people that are able to purchase land intensify the use sometimes without regard to planning principle.

## **5.2 RECOMMENDATIONS**

In order to redress the negative impact of industrial location in the study area, the following recommendations are made:

- i. There is need for increase in the rate of development of infrastructural facilities, services and amenities in the area, also necessary is an overhauling of the existing ones and adequate planning for the future demands. There is need for at least two more fire stations to be located strategically near the industrial area.
- ii. Waste management measure and planning principles should be introduced and enforced in order to forestall future environmental hazards. The long term effect of which, if not prevented, may not be limited to the study area, rather it may spread to other parts of the country and even beyond the country since the effect do not know international boundary.
- iii. Government should embark on enforcement of the environmental laws and planning regulations. For instance, a task force can be set up to ensure that industries comply with the regulations and standards of the Federal Environmental Protection Agency (FEPA) and the Ogun State Environmental Protection Agency (OGEPA). The planning Authority responsible for planning controls in the area should ensure that no industrial proposal is approved without the Environmental Impact Analysis (EIA) Report as a pre-requisite in accordance with the Urban and Regional Planning Law, Decree 88 of 1992.



- iv. In order to check the excessive influx of population into the area, government should ensure that equal industrial development opportunities are given to the other parts of the state through the creation of conducive environment for industrial development. This will assist at re-directing population to other parts of the state.
- v. It is necessary to pay proper attention to the technical manpower training in order to produce skilled labour to meet the need of the industries both presently and in the nearest future. The technical institution of this nature should be established in the study area.
- vi. It is equally essential to develop agriculture on a large scale within the study area in particular and Ogun State in general so as to supply the necessary raw materials and food stuffs for the industrial workers and the people living in the area. This will also go a long way to woo back those people that had abandoned agriculture for other economic activities.

### **5.3 CONCLUSION**

Based on the above findings and recommendations, it is evident that industrial development is essential to the socio-economic growth of any town, without it, a town can not achieve a socio-economic balance. In order to understand how a city works in terms of interaction between industrial development and the various land uses therefore, industrial location in any town or city need be planned in order to achieve an aesthetically functional and effective built environment.

It is hoped that the recommendations suggested if applied, will vastly assist at stimulating the positive impacts and also go a long way to improving the negative situation. This

project has also confirmed the assertion that industrialization is the center piece of the economic development process of any economy.

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**STUDY OF SOCIO-ECONOMIC AND ENVIROMENTAL IMPACT OF INDUSTRIAL LOCATION IN OTA OGUN STATE.**

**N.B:** Tick as appropriate

**QUESTIONNAIRE**  
**HOUSEHOLD / HOUSING SURVEY**

1. Type of Housing
  - a) Room type    (b) Flat                      (c) Compound House
  
2. Household size:.....
3. How many rooms does your household occupy?.....
4. When last did you change accommodation?.....
5. What is the reason for the change?.....
6. How much do you pay as rent?.....
7. Where do you work?.....
8. How do you go to work?:
  - a) By trekking
  - b) By bus
  - c) By taxi
  - d) By staff bus
  - e) Other (specify)
  
9. Name of respondent:.....
10. Residential address:.....  
.....

**STUDY OF SOCIO-ECONOMIC AND ENVIROMENTAL IMPACT OF INDUSTRIAL LOCATION IN OTA OGUN STATE.**

**N.B: Tick as appropriate**

**QUESTIONNAIRE**

**INDEX NO:.....**

1. Name and Address of Industry:.....  
.....
2.
  - i. Location:.....
  - ii. Name of Estate:.....
  - iii. Site Area in M2:.....
  - iv. Topography
    - a) Flat (d) Valley
    - b) Sloppy (e) Swampy
    - c) Hilly (f) Other features
3.
  - i. Year Established
  - ii. Is this:
    - a) An independence business: Yes / No
    - b) Part of a larger industry: Yes / No
4. Nationality of Owners:
  - i. Nigerian
  - ii. Foreigner
  - iii. Nigerian and Foreigner
5.
  - i. Type the product:.....  
Product of adjacent Industry:.....
6.
  - i. Source of raw materials:.....  
.....
  - ii. Do you have storage facilities for:
    - a) Raw material Yes / No
    - b) Finished products Yes / No

7. a) Mode of transportation of raw materials. Is it by:

- i. Road
- ii. Sea
- iii. Rail
- iv. Air

b) Mode of transportation (own vehicle, contract vehicle)  
(location of contractor)

8. i) Market extent for finished products:

- a) Within the State
- b) Other State
- c) Other Countries

ii) Means of distributing the finished products. Is it through:

- a) Direct Sales
- b) Salesmen
- c) Appointed Distributors
- d) Location of Distributors

9. What factors attracted the Industry to this location

- a) Availability of land at low cost - Yes / No
- b) Proximity to raw materials - Yes / No
- c) Accessibility and transportation - Yes / No
- d) Market for finished product - Yes / No
- e) Utilities, service and facilities - Yes / No
- f) Availability of skilled labour - Yes / No
- g) Political influence - Yes / No
- h) Government Industrial Development Policy - Yes / No

10. Employment

- a) No. of people:
  - i. Below 50
  - ii. 50 – 100
  - iii. Above 100
- b) Organisational structure. How many departments:
  - i. Only one Yes / No

- ii. More than one                      Yes / No
- c) Three shifts                          Yes / No

11. Utilities / Facilities:

- a) Do you have accommodation facilities for:
  - i. Senior staff only
  - ii. Junior staff only
  - iii. Senior staff Junior
  
- b) Availability of water -              By government / borehole, deep-well,  
purchase from vendor
- c) Electricity supply   -              adequate / inadequate
- d) If inadequate how do you supplement
- e) Sewage disposal   -              underground drain: .....
- Open drain                      -              treatment plant: .....
- No provision: .....
- f) Industrial Waste
  - i. Solid Waste                      (ii) Liquid Waste                      (iii) Gaseous
  - iv Organic                          (v) Inorganic

12. Transport Service

- a) Do you have bus service for your workers              -              Yes / No
- b) If yes, what is the capacity of the vehicle
- c) What route(s) do you operate
- d) How many trips do you operate per day